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THE

B R I T I S H

F A R M E R ' S M A G A Z I N E .

N E W S E R I E S .

Agriculture not only gives riches to a nation, but she only riches she can call her own.—DR. JOHNSON.

VOL. LVII.

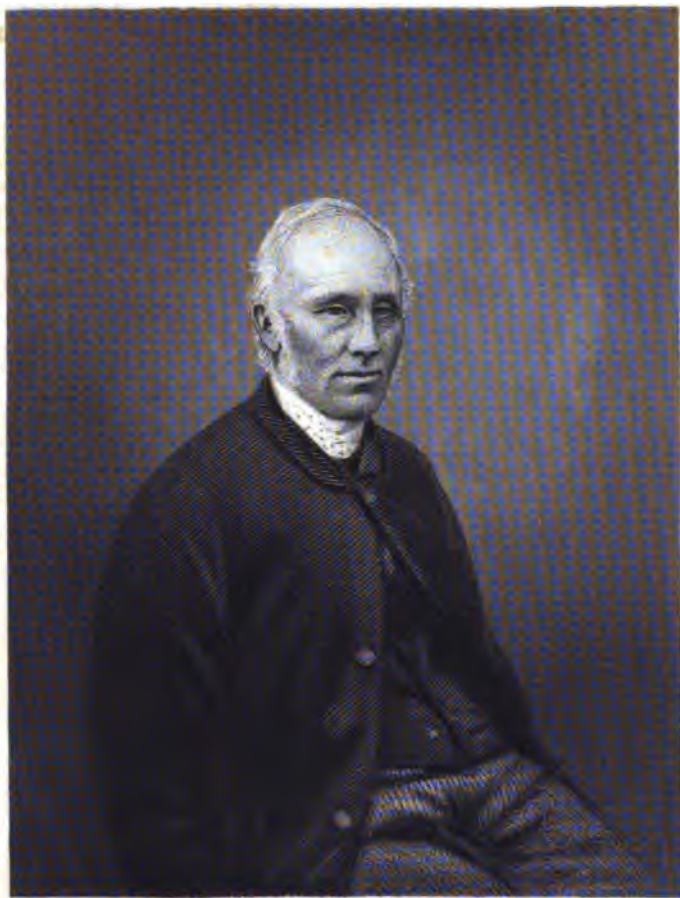


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William Smith

Woolston

THE BRITISH FARMER'S MAGAZINE.

NEW SERIES.

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1870.

NO. CXXXIV.

PLATE I.

MR. WILLIAM SMITH, OF WOOLSTON. AN AUTOBIOGRAPHY.

At the death of my father in 1837 I came in possession of my farm, now known as the Woolston Farm, and thus stood the representative of the family who had possessed it for 200 years. It consisted of eighty-six acres of grass land and five acres of ploughed land upon the flat, near the house; and on the clay hill, one-and-a-half miles from home, there was a grass field containing nine acres, and four fields of what was called ploughed land, containing together thirty-eight acres; yet in each of these fields there were two acres of roundabouts or waste land, most of which was said to be worthless for cultivation. In all 136 acres. The ploughed land was worked upon the four-course system, viz., first year dead fallow, then followed wheat, and after that beans, and last of all came wheat again. Barley or oats came as the last crop occasionally. Four good horses were always kept to work this thirty-five acres of arable land, and very frequently there were five kept to do it with the work of the whole farm. I at once ploughed-up the eight acres of roundabouts or idle land in the four ploughed fields, and thus increased my ploughed land to forty-three acres.

In 1842 I bought a ploughed field containing thirteen acres adjoining my land upon the flat near home. Soon after this I ploughed-up fields now known as Nos. 1, 3 part 2, 4, and 5, containing together forty-two acres, and thus increased my ploughed land to ninety-eight acres; and soon after this I bought another field of grass land near to my flat land. I at once ploughed it up and thus increased my arable land to 113 acres. To work it, it needed six good horses; and to save the carting of the heavy land corn and manure one-and-a-half miles, I built a barn and yard upon it.

In 1845—after having worked my heavy land upon the dead fallow and three-crop system, and finding that the crops were not over productive, about 20 bushels per acre, fallow land included—I came to the conclusion that subsoiling must be good upon such land, so I had a subsoiler made, and tried the first time on field No. 2, heavy land, by ploughing the field across to make sure that the trial should be fair. I subsoiled a piece across the middle, leaving the top and bottom of the field unsubsoiled. The land had been manured alike. In the February following I planted the field with beans: they all came up well together; but in May it could be seen that those on the unsubsoiled land were taking the lead, and by the end of May they were fully eight inches the highest, and they kept the lead up to harvest, when it could be plainly seen that they were not only the highest but the fullest of corn. This convinced me that deeper culture was needed for

beans, but with only six horses I could not find time before Christmas to plough and subsoil in the ordinary way, a field of land a year for beans, for the plough needed four horses to work it, and the subsoiler needed three—seven good horses in all; therefore, as I had only six, I was obliged to make any shift to do a bit at all. I did not like it, so I contrived the plan of ploughing my land in ridge, a yard from ridge to ridge; and then, subsoiling round the ridges in this way, I could ridge first and then subsoil half-an-acre a-day with four horses. The work was heavy to the man as he had to hold the plough sideways all the time. In the February following the land was planted with beans, one row on each side the ridge. They thrived well, and I had a good crop. After harvest I took my subsoiler and pulled it with four horses along every ridge and thus cracked the land, and then passed a powerful cultivator, worked with six horses, across the ridges, smashing the whole to a depth of six inches, and thus prepared my land for wheat the next year. I liked the plan and continued to work upon it till 1855, when I began to work with steam power. It had one drawback, viz., heavy work to the man.

In 1855 it occurred to me that if I combined a powerful double mould-board plough and two subsoilers together and worked it with a steam engine, I could throw up a ridge a yard in width and subsoil it at one operation, and I resolved to make a trial of it by setting my blacksmith to work to make a combined ridger and subsoiler; and I also had made a three-tined smasher upon the same principle, by merely substituting another subsoiler, or rather a powerful tine in the place of the double mould-board plough. I then provided myself with a windlass, &c., and a seven-horse power engine, and in December of that year, after selling-off three horses to make room for the engine, I made a start. The first day's trial showed many defects in my arrangement. The implements were right but the speed of the engine was wrong, for it was much too fast, for the implement when set to work at a depth of six inches held the engine with 50lb. pressure of steam upon it at a dead stand. We relieved the engine by taking the implement out of the ground two inches; at this depth (four inches) the engine made the implement trot across the field full five miles an hour. The lookers-on, who looked old and shook their heads when they saw the engine stuck fast, now laughed as they trotted along with the implement. Yet the depth (four inches) for ridging and subsoiling would not do for me. The turning of the implement at land's-end would not do with one rope in front to pull the implement along, and

the other hooked on behind to pull the back rope up; for as soon as the implement had been stopped we had to pull with the strength of three or four men to unhook the back rope, and at turning the first time we lifted the implement with levers to place it in position for going back. This done, and hooking on the rope, we trotted across the field again, but as soon as we stopped the second time I had the back rope unhooked and pulled on to the front of the implement, and hooked it to the stem of the front wheels with a strong S hook; and without the aid of any lifting and levers we set the engine to work to pull the implement round itself, which it did in first-rate style, and thus saved for ever after all the levering and pulling. Our anchorage was bad; they were wooden ones, needing holes dug in the ground (at the end of each bout), three feet wide and from two to three feet in depth, and as I had got a number of these holes prepared ready for the first day's trial, the lookers-on asked whether I had got a lot of graves dug ready to bury them. I could stand all that. Besides making use of these holes, I had to contrive, before I started, another anchor, for with the two that I had received as a set I could not start; therefore I fixed upon a stile-post for a third, fixing the snatch-block to it with a strong rope. As soon as the implement had crossed the field four times, I told the lookers-on that I had seen enough, but that if they would like to trot round again they might. They should, was the reply, and away they went some half-dozen times, and all was over for the day. I got new pulleys put upon the engine and windlass, to reduce the speed of the implement to about two miles an hour; a set of new anchors (iron ones)—those now known as the Woolston anchors; a fourth snatch-block; and a turning bow for the implement, to attach the ropes to, to enable the engine to turn it easily at land's end. As soon as I had got all this done I started again, and got off well, using the smasher, and completed two fields—No. 1 and No. 2 light land—containing together twenty-five acres, and we packed the tackle up till the March following, when we brought it again to work No. 8 heavy land over twice for peas (under horse culture it would have been dead fallow), and we got on well, for we smashed the twelve acres and crossed it by steam, and then scuffed it once by horses, and then burnt a lot of the twitch that we had dragged out, and then drilled in the peas. All this was done in ten days, and at harvest I had a good crop—5 qrs. per acre. We then packed up the tackle again, and after harvest we set to again, and the best thing that can be said about what I did then is to re-write what I wrote to the *Mark Lane Express*, on the 18th of November, 1856:

"I have since harvest ploughed by steam the whole of my farm, excepting a bit of wheat stubble left to try an experiment on in the spring, and a bit of clover ley ploughed with horses. It may be interesting to some of your readers to know the results. I find that the implements exhibited by me at Chelmsford are perfect; that any seven-horse engine is sufficiently powerful for every useful purpose; that any cold clay, hilly, and uneven field may be ploughed; that in ploughing my bean and pea stubbles, at a depth of six inches, I did an acre in one hour and thirteen minutes and an average of five acres per day, including time for shifting from field to field, at an average cost of 5s. 2d. per acre, including men, coal, water, and horses, for shifting; and that in ploughing my wheat stubbles at a depth of eight inches on the heavy and ten inches on the light land, I did an acre in two hours and an average of three acres per day, including time for shifting as above, at an average cost of 8s. 8d. per acre, including men, coal, water, &c., as above: to this must be added interest of money and wear-and-tear—say, 1s. 8d. per acre, which will be the

outside, the tackle coming in nearly as good as it went out. As to the value of the work, I give it you in the words of practical farmers who visited me: 'On the wheat stubbles the common plough is of no use against you. On heavy land the spade cannot equal yours. On bean stubbles one ploughing with yours is worth more than two with the common plough.'

This was a brief report of my work done in the autumn of 1856; and as soon as I had completed this work I provided myself with a book, in which I entered all the operations, both steam and horse power, giving the cost of each separately, and the total cost of seed-bed on each of my several fields, not forgetting the 1s. 6d. an acre for interest, &c., nor the kind of crop planted on each field; and I made like entries in it every year afterwards during my fourteen years under steam culture, ending with the harvest of 1869. Here is a summary of that book.

HEAVY LAND.—FIELD No. 1.

One ridge ploughing and subsoiling by steam power	£0	7	3
Ten smashings by steam power	3	6	8
Eight cultivatings by horses	0	16	0
One subsoiling by horses	0	3	0
Two ploughings with horses	1	4	0

£5 16 11

Or an average of 8s. 7d. an acre a-year. The cropping has been—Oats one, clover two, wheat four, swedes one, barley two, and beans four.

FIELD No. 2.

Two ridge ploughings and subsoiling by steam power	£1	0	4
Eight smashings by steam power	2	11	5
Two cultivatings and drilling at one operation by steam power	0	10	0
Five cultivatings with horses	0	11	6
Two subsoilings with horses	0	6	0
One ridge ploughing with horses	0	4	0

£5 3 3

Or an average of 7s. 4½d. an acre a-year. Crops—Beans five, wheat five, swedes one, barley two, and clover one.

FIELD No. 3.

Two ridge ploughings and subsoilings by steam power	£1	0	4
Eleven smashings by steam power	8	11	5
Three cultivatings and drillings by steam power	0	17	0
Seven cultivatings with horses	0	14	0
One subsoiling with horses	0	3	0
One ridge ploughing with horses	0	4	0

£5 9 9

Or an average of 9s. 3d. an acre a-year. Crops—Peas one, barley two, beans five, wheat five, and swedes one.

FIELD No. 4.

Two ridge ploughings and subsoilings by steam power	£0	17	5
Ten smashings by steam power	8	6	8
Three cultivatings and drillings by steam power	0	17	0
Nine cultivatings with horses	0	18	0
One subsoiling with horses	0	3	0
One ploughing with horses	0	12	0

£5 14 1

Or an average of 9s. 7d. an acre a-year. Crops—Wheat five, beans six, barley two, and swedes one.

LIGHT LAND.—FIELD No. 1.

Three ridge ploughings and subsoilings by steam power	£1	10	6
Five smashings by steam power	1	11	5
Three cultivatings and drillings by steam power	0	19	0
Seven cultivatings by horses	0	14	6
One subsoiling by horses	0	3	6
Two ploughings by horses	1	1	6
One ridge ploughing by horses	0	4	0

£5 2 11

Or an average of 8s. 9d. an acre a-year. Crops—Beans three, wheat five, roots two, barley two, clover one, and peas one.

FIELD No. 2.

Two ridge ploughings and subsoilings by steam power	£1 0 4
Five smashings by steam power	1 13 4
Two cultivatings and drillings by steam power.	0 12 0
Six cultivatings by horses	0 12 0
One subsoiling by horses	0 3 0
Three ploughings by horses	1 8 0
One ridge ploughing by horses	0 4 0
	<hr/>
	£5 19 8

Or an average of 8s. 0½d. an acre a-year. Crops—Wheat three, wheat five, clover two, beans two, and barley two.

FIELD No. 3.

Three ridge ploughings and subsoilings by steam power	£1 7 7
Six smashings by steam power	2 0 0
Ten cultivatings by horses	1 2 0
Two subsoilings by horses	0 6 0
Two ploughings by horses	1 1 0
	<hr/>
	£5 16 7

Or an average of 8s. 4d. an acre a-year. Crops—Wheat five, roots three, barley two, beans three, and clover one.

FIELD No. 4.

Four ridge ploughings and subsoilings by steam power	£1 17 9
Two smashings	0 13 4
One cultivating and drilling by steam power	0 7 0
Four cultivatings by horses	0 10 0
Two subsoilings with horses	0 6 0
Four ploughings by horses	1 15 0
	<hr/>
	£5 9 1

Or an average of 7s. 9½d. an acre a-year. Crops—Wheat five, beans three, roots two, barley two, and clover two.

FIELD No. 5.

Three ridge ploughings and subsoilings by steam power	£1 10 8
One smashing by steam power	0 6 8
One cultivating and drilling by steam power	0 7 0
Six cultivatings with horses	0 12 0
One subsoiling with horses	0 3 0
Four ploughings with horses	1 11 8
One ridge ploughing with horses	0 4 0
	<hr/>
	£4 14 8

Or an average of 6s. 9d. an acre a-year. Crops—Clover three, wheat five, beans two, barley two, and roots two.

FIELD No. 6.

One ridge ploughing and subsoiling by steam power	£0 7 8
Three smashings by steam power	1 0 0
One cultivating and drilling by steam power	0 7 0
Nine cultivatings with horses	1 0 0
One subsoiling by horses	0 3 0
Three ploughings with horses	1 11 8
One ridge ploughing with horses	0 4 0
	<hr/>
	£4 12 9

Or an average of 6s. 7½d. an acre a-year. Crops—Wheat four, clover three, oats two, roots one, barley three, and peas one.

My land was not clean at starting, but it is clean now. The heavy land part of my farm under horse culture had a dead fallow every fourth year; under steam culture it has had none, yet it is clean.

The turn-over plough has not been in Nos. 2 and 3 heavy land during the whole period of 14 years. It has been upon No. 1 twice, and No. 4 once, and that is all, thereby proving that the plough on heavy land under steam culture is of little or no use. On the light land part of my farm it has been more used—twice on No. 1, thrice on No. 2, twice on No. 3, four times on No. 4, four times on No. 5, and thrice on No. 6; worked on all by horse power, thereby showing that on lighter soils it is more needed.

The average cost of seed beds, as may be seen above,

has been on the heavy land 8s. 8d. an acre, and on the lighter land 7s. 4½d. an acre. Under horse culture the former would cost over £1, and the latter would cost near upon £1 per acre; therefore I have effected a great saving.

The saving in horse keeping has been very great. Under horse culture I used six to work my farm, not over 6 in. deep. Under steam culture I have only kept three, and they on an average have worked only 118 days a-year. Now, if we fix the cost of the keeping of a horse, with shoeing, &c., at £25 a-year, exclusive of the value of its manure, I save £75 a-year by the reduction of six horses to three. This, for 14 years, gives a total of £1,050, the cost of two complete sets of tackle—even three sets, if we set off half the engines to thrashing.

The increased produce question I went into in August last, in a letter that was published, showing that it had been quite two quarters per acre upon my heavy land. Therefore, if we calculate it upon my 40 acres of heavy land, leaving the light land unnoticed, we get a gain of 80 qrs. a-year for 14 years, which gives a total of 1,120 qrs., and at 40s. per qr., a value of £2,240.

You see that there is not only a saving in the cost of seed beds, and in the keeping of horses, but there is also on heavy clay land a great gain by increased produce, and the land can always be kept clean and ready for crop at the cost shown above, provided the work is done at the proper time.

Will the landlords and farmers of England, with these facts before them, still turn a deaf ear to what I say, and let their 800,000 acres of dead fallow, as shown by the Board of Trade, still remain under dead fallow, when a mere 8s. 8d. an acre could work and keep it clean for ever?

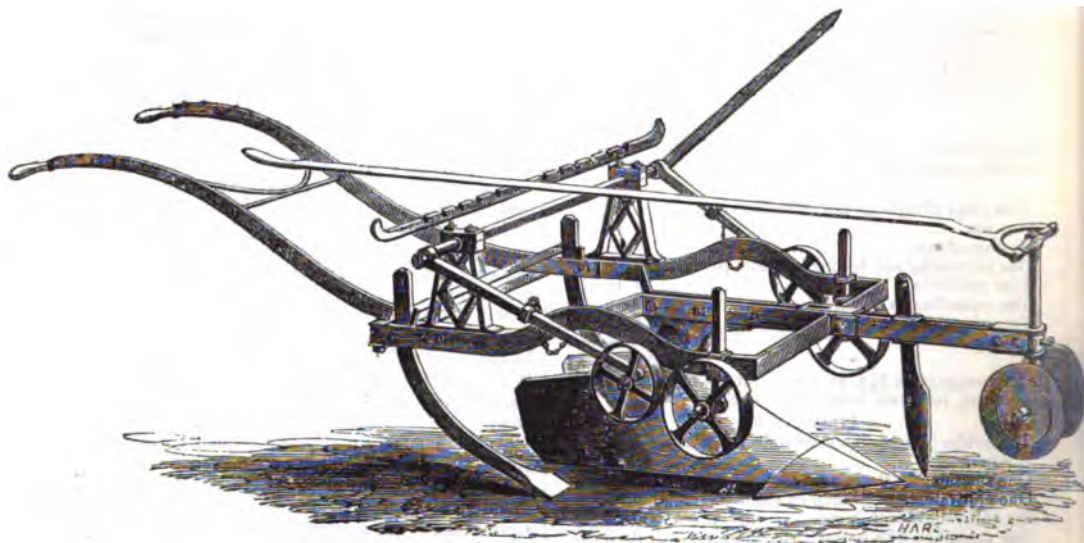
By this summary it may be seen that I worked a combined cultivator and drill. I must explain this:

In 1861, it occurred to me that such an implement would be useful, I therefore set to to contrive and have one made, and in February, 1862, I tried it on No. 1 light land, that had been smashed in the autumn by cross-cultivating and drilling in the beans at one operation. It did its work well, and I had a capital crop, but the cost and weight of the machine was a drawback—cost £70, weight 1½ tons. In the March following I worked it again on No. 6 light land, that had been roots, fed on, cultivating the land without any previous operation, and drilling in the barley at one operation. This did well, and I had a good crop. I also that same year cultivated and drilled barley into No. 4 heavy land, after swedes, fed on, and this was done well without any previous operation, and I had a good crop. In 1863, No. 2 heavy land after beans was cultivated and drilled in wheat without any previous operation. No. 2 heavy land was cultivated and drilled in barley, after swedes, at one operation, without any previous operation. No. 4 heavy land, after being smashed in the autumn of 1862, was in the February following crossed and drilled beans, at one operation. No. 1 light land after beans was cultivated and drilled wheat at one operation, without any previous operation. No. 2 light land, after roots was cultivated and drilled barley at one operation, without any previous operation. All these crops proved good ones, and I so liked the machine and the kind of work that I set to and contrived a new machine, and had it made more than half a ton lighter in weight, and £30 less in cost, and the year following I worked it thus: No. 4 heavy land after beans, cultivated and drilled at one operation and that was all for the crop. No. 4 light land wheat after beans. The land was cultivated, and the seed drilled in at one operation, and that was all. The crops this year were good. In 1865, the machine planted the wheat on No. 3 heavy land, and on No. 5, light land: these crops did

well. In 1866 I did nothing, for I began to see that this kind of work would not do, for knot grass and other objectionable weeds began to put in their appearance, the land having lost the effect of a dry smashing in the autumn, but for all that I tried it again the next year, 1867. In No. 2 heavy land the wheat was drilled by the machine, cultivating the land at the same time, and so was No. 3 heavy land, and so also was No. 1 light land. No. 2 light land was smashed first and then crossed, and drilled wheat at once. This was the last that the machine did, for although the crops proved good my land became full of knot and other grasses, so much so that if I had kept on upon this plan I must soon have had a

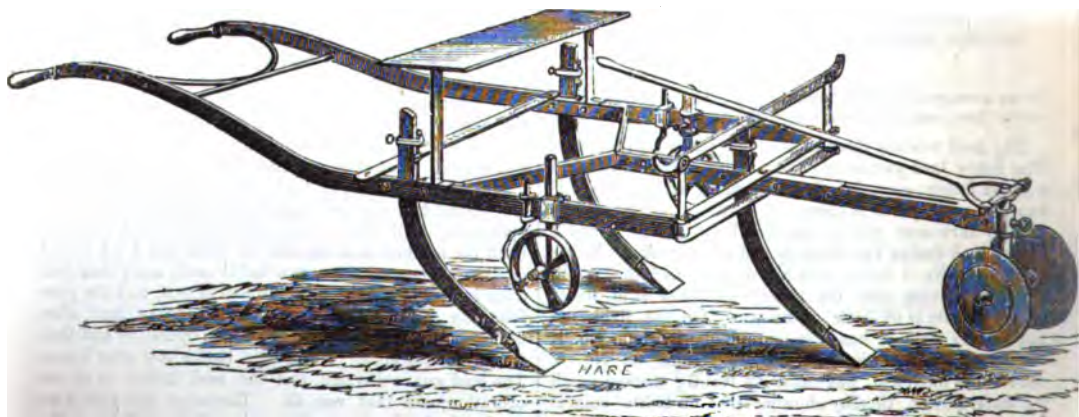
fallow, therefore I condemned the machine. The wet seasons of 1866 and 1867 no doubt had something to do with these grasses, but an implement that cannot keep land clean in wet seasons will not do for me. I fell back upon the smashing one year for wheat, and the ridging and subsoiling the other for beans and soon righted myself; and if I had not have told this tale now, the people would not have known that dirty grasses were creeping in upon me in 1866 and 1867, but I tell it to guard others against ever attempting the do too much "system."

Now, I will show and explain the implements that I do like:



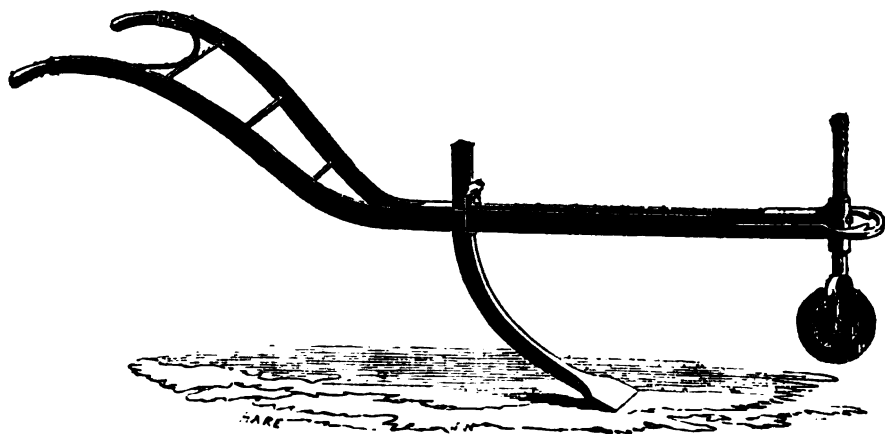
This is my ridger and subsoiler with which I started in 1855. It is a ridging plough and subsoiler, arranged in a strong frame, with a pair of wheels in front and another pair at the middle of the framing to regulate the depth, and the front wheels are also the guiding wheels. There is also an additional pair of wheels to raise the plough at lands end. The subsoiler being set so as to penetrate 4 or 5 inches deeper than the bottom of the trenching plough. By this operation the land is

trenched, subsoiled, and laid up dry for the winter more effectually and in better style than is done in our gardens with a spade. I never had a failing crop from work done by it, and the after operations for the succeeding crop have always been found light. The implement is but little known, therefore I am the more desirous of giving it here to make it more generally known, and the more so as the work done by it is vastly valuable.



This is my amasher, with which I started in 1855. It has three tines arranged in a strong frame, and the depth of working is regulated, and it is guided the same as my ridger and subsoiler. It is a very valuable implement for breaking up bean and pea stubbles in the autumn. It clears a width of from 30 to 36 inches. I continued to work it for several years; but, after giving £100 and my seven-horse engine for a more powerful engine, I had con-

structed a very powerful five-tined implement upon the same principal, covering a width of 48 inches, with which I can with the more powerful engine average 8 acres a day; whereas, with the three-tined implement and seven-horse engine, I could do only 5 acres a day, therefore the cost of operation is brought down from 5s. 2d. to 3s. 2d. an acre.



This is my subsoiler, with which I subsoiled round the ridges under horse-culture, before I adopted steam-power, and which I find very useful now.

Now, I will explain how I use them. My field No. 1 (heavy land) was worked after a crop of wheat with the ridge and subsoiler. The land lay in the state in which the implement left it until February (a careful man previously to this having walked every ridge, and took everything objectionable in the shape of dock or twitch, &c., from it: 3 acres a day is not more than a short winter-day's work at this job), when I planted the bean one row on each side the ridge. This placed the rows from 18 to 20 inches from row to row. After planting, the land was harrowed, to pull down the ridges, and cover in the beans. The beans were hand-hoed over three times, to keep the land clean from seeding-weeds, and I had a good crop of beans. As soon as the beans were harvested, I set my amasher to work to pull up the bean stubble, and cross-cultivated it with horses, and that was all that was done to it before planting it with wheat. Next year this field will be ridged and subsoiled again for beans, and go through the same process as it did for the preceding crop of beans, and so on—wheat and beans as long as I live.

Now, I will leave the heavy land, and go to the light field No. 1. It was wheat last year, and has been manured and ridged and subsoiled for roots next year. A careful man will look over it in the winter, and take everything objectionable away. He will do 8 acres a day, I am certain. In March I shall put four horses to work to pull my subsoiler along every ridge, and thus split them. The part for mangolds I shall pass a harrow over, and drill in the seeds; and the part for swedes will get a cultivating once over in April afterwards (a harrowing or two), and the seeds will be drilled in. The horse subsoiler does more than the splitting of this ridged land for root; for with it and the common plough I ridge up and subsoil all my headlands round my ridged work, and in a dry spring I may on my heavy land split my ridges before planting the beans. This in dry weather in February is a very good operation.

In 1858 I addressed a letter to the farmers of England, from which I now make the following extract:

"If steam power is to be generally applied to the cultivation of the soil, every large farmer must possess a set of apparatus of his own. Two or three small farmers may have a set between them, or hire one of another, according to arrangement, for September to October will not wait, and if the work is to be done well it must be done in those months. My own experience convinces me that one operation of the cultivator in those months does on clay land produce as good an effect as two ploughings."

This shows plainly how thoroughly I was impressed with the necessity of doing our work in September and October.

I reprinted this extract twice over in my revision of "Facts of interest to the Farmer," which shows plainly that in 1866 I felt the necessity of doing the work in those months as much as ever, and in my remarks on my fourteen years' summery it may be seen that I insist upon having the work done at the proper time. This shows clearly that I cannot be driven from the point; neither shall I, for I know that the prosperity of the farmer under steam culture depends upon it, and so to some extent does the price of bread to the people.

I have sketched the road that led me on to steam. I then show my start and first year's practice; and then I give a summary of my fourteen years' practice, with some remarks thereon; I then show the rise and fall of my combined cultivator and drill; then I show and explain my implements; then I explain how I work them; and then I show that I addressed the farmers of England, impressing upon them the necessity of getting the work done in September and October; and now I must show that on the 29th of September, 1869, I had a new start under altered circumstances, having bought another farm (sixty-one acres of heavy clay) adjoining my old heavy clay land (ten acres of this is grass and fifty-one acres arable), and seventy acres of grass land upon the flat, near to my light land. I have thrown the two lots of heavy land together, and therefore a new book of re-

ference was needed, and to make my position now quite clear as to cost of working, &c., I will give a copy of it, showing the cost and all particulars as to the work done this autumn for next year's crop, which are not included in my summary for my fourteen years' practice. Here are the particulars:

September 15, 1869.—Finished harvest.

21.—Started the smasher on part of No. 8, heavy land, 20 acres.

22.—Worked all day.

23.—Finished the 20 acres at 10.55 a.m.; then shifted the tackle to No. 2 heavy land, and started.

24.—Worked all day.

25.—Finished No. 2 heavy land at 5.10 p.m., 22½ acres; then shifted to No. 1 heavy land.

26.—Sunday.

27.—Worked all day.

28.—Worked all day.

29.—Finished No. 1 heavy land at 8.20 a.m., 16½ acres. The men were at dung-cart the rest of the day.

30.—The men at dung-cart all day.

October 1.—Tackle shifted to, and started on light land No. 6, working the ridges and subsoiler.

2.—Worked all day on No. 6.

3.—Sunday.

4.—Finished No. 6 (14 acres) at 11.20 a.m.; then shifted, and started the ridger and subsoiler on No. 1 light land.

5.—Worked all day.

6.—Finished No. 1 (12 acres) at 8.20 a.m.; then shifted the tackle, and set the smasher to work on No. 4 light land.

7.—Finished No. 4 (12 acres) at 11.50 a.m.; then shifted the tackle to No. 5 light land, setting the ridger and subsoiler to work.

8.—Worked all day on No. 5.

9.—Finished No. 5 (12 acres) at 11.15 a.m., and then packed up the tackle for the year.

The total consumption of coal has been (for the 109 acres) 9 tons 18 cwt., or an average of 1 cwt. 2 qrs. 17 lbs. per acre. A boy only fifteen years of age worked the implements during the whole period.

I have noticed Sundays and dung-cart to make it quite clear as to the working days. It may be seen that I have smashed 71 acres in 8½ days, and that I ridged and subsoiled 88 acres in 6½ days. The former was done at a depth of 6 inches, and the latter from 10 to 12 inches. Now I must give a day's working expenses when working the ridger and subsoiler:

	£	s.	d.
Engine man	3	6	
Windlass man... ..	2	6	
Two anchor men	5	0	
Fifteen-year-old plough-boy	1	6	
Plough-boy assistant	2	6	
Two roller-boys	1	6	
Water-fetcher... ..	2	0	

18 6

The plough-boy's assistant is not needed with the smasher, therefore the cost for men at that work stands at 16s. per day. The average daily consumption of coal was 11½ cwt. and a fraction: 99 cwt. to smashing, and 79 cwt. to ridging and subsoiling. The seventy-one acres of smashing in eight-and-a-half days stands thus:

	£	s.	d.
Men for 8½ days, at 16s. per day	8	16	0
Coal, 4 ton 19 cwt., at 16s. per ton... ..	3	19	2½
Oil, at 9d. per day	0	6	4½

£13 1 7

or an average of 3s. 2d. per acre, yet not quite, for I had

thrown the fractions away. This shows plainly that much as I liked my seven-horse engine and three-tined cultivator at my start, I acted wisely by giving the seven-horse engine and £100 for my powerful one, and by having a powerful five-tined cultivator made, clearing a width of 48 inches; for by this move I have reduced my cost for men and coal from 5s. 2d. to 3s. 2d. per acre, and when 1s. 6d. is added for interest of money and wear-and-tear, the total cost for the operation per acre is only 4s. 8d., and when a cross cultivating by horses is added to this, the total cost of a seed bed for wheat stands at 6s. 8d. per acre, and that is all on my very heavy land.

The 38 acres of ridging and subsoiling in 6½ days stands thus—

	£	s.	d.
Men for 6½ days at 18s. 6d. per day	6	4	10½
Coal, 3 tons 19 cwt., at 16s. per ton	3	3	2½
Oil at 9d. per day	0	5	0½

£9 13 1½

or an average of 5s. 1d. per acre, and a very little fraction over. If you look back you may see that my average of this kind of work at my start stood at 8s. 8d. per acre, excluding 1s. 6d. per acre for wear-and-tear; therefore my position here is greatly improved by using a more powerful engine, and when 1s. 6d. per acre is added to the 5s. 1d. per acre, at which this operation now stands, we get a total of 6s. 7d. per acre for ridging and subsoiling my heavy land 10 inches deep—the cost of a seed-bed for beans, for that was all I did on my heavy land last year.

The 1s. 6d. per acre for interest of money and wear-and-tear passed unquestioned through my fourteen years' practice; yet at the end of my work done for my fifteenth crop, it was questioned, and well it might, for it stood forth with 3s. 2d. an acre, for men, coal, oil, and water as the working costs, and 2s. an acre for cross cultivating with horses, to represent the total cost of a seed-bed for wheat on my heavy clay land, at 6s. 8d. an acre, while under horse culture this very land would cost quite 14s. an acre to plough it over once. I have repeatedly explained the matter, and I will give the explanation here, for the public have a right to know all about it. Here is my position at starting—

	£	s.	d.
Dec. 1855.			
Seven-horse engine	300	0	0
Windlass, &c.	80	0	0
Two implements made by my own blacksmith	18	0	0
Alteration of engine and windlass, new anchors, &c.... ..	33	0	0

£331 0 0

From this must be deducted the half of the engines, to be placed to thrashing, £100; and the sale of three horses £150, to make room for the engine; this fixes the balance of £81 as the extra tenant's capital needed at starting.

At my start I did 25 acres, and in the March following I worked 12 acres over twice on my heavy land and planted it with peas, which gave me a produce of 5 qrs. per acre, value £10 per acre. This field under horse-culture would have been dead fallow. After harvest, I worked again, and on the 13th Nov., 1856, I wrote to the *Mark Lane Express*, as I have before shown, but I will quote a few words here from that letter, to show what I said upon the interest of money and wear-and-tear question. "To this must be added interest of money and wear-and-tear, say 1s. 6d. per acre, which will be the outside, the tackle coming in nearly as good as it went out." The quantity of work done in the autumn of 1856 was 66 acres. When writing to the *Mark Lane Express* (I took into consideration the £100 for the half

of the engine for thrashing, and the £150 for horses sold off, and as there would be only £4 1s. due for interest on the extra tenant's capital needed at the following Christmas; and that I should have saved £75, the keeping of three horses sold, and thus gained enough in that way to pay, not only the interest, but nearly all the extra tenant's capital needed, and in addition to this I had got my £120 worth of peas instead of a dead fallow) I knew that I was using the word "interest" just to satisfy the public, who at that time made it a matter of necessity that that word must appear in all matters in connection with steam cultivation. The fact is the 1s. 6d. an acre represented wear-and-tear and depreciation, and I am quite certain that it was a fair estimate. It may be said that mine was a low-priced set of tackle at starting. True! but it answered my purpose well as an experimental set. I have it by me now, and am proud of it, it being the first that worked land practically by steam power, yet for the last ten years I have worked a four-wheeled one; but to make matters quite plain and fair, I will show my case in another form, by making a fresh start on the 29th of September, 1869, when I entered upon my new occupation, bringing my total arable land up to 163 acres, showing the number and cost of horses, &c., that would have been needed to work it by horses only, and the number and cost of horses, &c., with the cost of an engine and a set of steam tackle to work it upon the Woolston system. I fix the cost of a horse with its tackle and implements to work with, at £45, the cost of an engine at £300, charging the half of it to thrashing; the cost of a set of tackle, with a five-tined smasher and a ridger—the two implements I use—at £216, the price at which they are offered by the makers to the public, and the cost of the keeping of a horse at £25.

My 163 acres of arable land consists of 90 acres very heavy clay, hilly and uneven; in fact, there are five hills upon it, all at points very steep, and 73 acres of what I call light land, but in fact is not so. It is upon the flat, mixed gravel and clay. Under horse culture, to work the whole 6 inches deep 10 horses would be needed; under steam culture, to work it 10 inches deep on the heavy clay part and 12 inches deep on the lighter part I have started off with 5. That number will not get half employment throughout the year, as I have a lot of landlord's work to do, and I mean to be well up to the mark for doing all, both landlord's and tenant's for at least this year. The case stands as follows:

STEAM-POWER CULTURE FROM MICHAELMAS 1869 TO
MICHAELMAS 1870.

Half the cost of the engine	£150	0	0
Cost of tackle	216	0	0
Cost of 5 horses, with implements, &c., at £45 each horse	225	0	0
Cost of keeping 5 horses at £25 each..	125	0	0
	£716	0	0

HORSE-CULTURE FROM MICHAELMAS 1869 TO MICHAELMAS
1870.

Cost of 10 horses, with implements, &c., at £45 each horse.....	£	s.	d.
Cost of keeping 10 horses at £25 each	450	0	0
Balance on the side of horse culture...	250	0	0
	£716	0	0

Therefore £16 more tenants' capital is needed to work this 163 acres farm of mine the first year, having the

whole in crop, than would have been needed under horse culture, having a portion fallow. The interest on the £16 extra tenants' capital needed is but a mere trifle, and the increased produce under steam culture can well afford to pay it.

Now, there is a point about this tenant's capital that is under consideration worth looking into, the word "interest." Interest is never charged on horses, their tackle, and implements, or on money for payment of labour. When a valuation is made horse-keeping is taken into account, their tackle and implements are also considered, and so is their doctor's bill, and the knowledge of now and then a dead hour is not tossed on one side; payment of labour is also considered, but interest of money never is. I will support my case by an extract from Mr. Morton's paper, read before the Society of Arts, p. 87, 1859:

"Now, the cost of horse-labour on 21 farms in different parts of the country, of which the particulars have been kindly given to me: Those farmers employ 282 horses, and they cost for food, for depreciation of value, and saddlers' and blacksmiths' bills £7,815 a year, their implements need £870 a year to keep them good, and the ploughmen and boys employed about them cost £4,241 a year in wages; about £13,000 in all, or £46 per horse per annum."

The farmers had to find this £13,000, yet interest upon it is not considered. Hereafter I will drop the word interest, for I have proved that extra tenant's capital on a moderate sized occupation of clay land where the Woolston system of steam-power culture is used is not needed. I shall use the word "extras" instead of "interest" to include in it what ever there may be, with wear and tear and depreciation.

The gains on the side of steam culture as carried out, by me are: increase of depth of culture, from 6 inches under horse-culture to from 10 to 12 inches under steam power culture, at a much less cost per seed-bed yearly, from quite £1 per acre under horse-culture to from 6s. 8d. to 10s. per acre. Under steam-culture a much cleaner system of working is got than under horse-power, the former never needing a fallow, while the latter needs one every fourth year on our clay soils. The result from all this is a great increase of produce, due first to having all the land in crop instead of a fourth part of it in fallow yearly, and the remaining is due to a greater fertility of the whole—in my own case full 2 qrs. per acre yearly on my heavy clay land, and my land is not exceptionally for the Board of Trade has shown that there are yearly 800,000 acres of fallow in this country on like soil to my heavy clay. These 800,000 acres must be multiplied by four to represent the quantity of land worked under the fallow system. This gives 3,200,000 acres of heavy land especially needing steam-power upon it, and if my data of gain is taken as a basis of calculation, and spread over this large quantity of acres, there is shown to be a clear gain of over £12,000,000 a year, to be had as gains of the country. Surely such a sum as that is worth trying for, especially as it can be won without any increased tenants' capital, excepting a little that must be lost in making the change from one system to the other. In pulling down a house and rebuilding it there is always a cost, be the old material ever so good; yet we seldom hear of regret or loss after it is done.

WILLIAM SMITH.

Woolston, December 18, 1869.

PLATE II.

DIADEM; A PRIZE HEREFORD HEIFER.

Diadem, a red with a white face, bred by Mr. W. Tudge, at Adforton, near Leintwardine, Herefordshire, and calved on August 1st, 1866, is by Chieftain 4th (2455); out of Deborah, by Pilot (2156), her dam Darling, by Carboneal (1525)—Daisy, by The Doctor (1088)—Dainty, by Orleton (901)—Pretty Maid, by Nelson (1921).

Chieftain 4th, a red with a white face, calved February 1st, 1864, was bred by Mr. T. A. Hollings, of Hill-end, Hereford. He is by Chieftain 2nd (1917), out of Rose of Weston, by St. Clement (2201), her dam Rose 5th, by Voltigeur (1445)—Rose 4th, by Byron (880), and so back to Rose 1st, by Young Waterloo (2341).

Deborah, a red with a white face cow, also bred by Mr. Tudge, and calved on August 3rd, 1868, has had three calves: Diadem in 1866; Dorcas, by Artist (2934), in 1867; and Duenna, by Dundee (3080), in 1868. She is still in Mr. Tudge's herd.

At the Leicester Meeting of the Royal Agricultural Society of England in 1868 Diadem took the third prize of £5 in the class of Hereford heifers under two-years-old; Mr. Arkwright taking the first, and Her Majesty the second with Duchess de Bronté. The judges wrote thus, "an extremely good class, containing several excellent animals."

At the Southampton Meeting of the Bath and West of England Society and Southern Counties Association, in 1869, Diadem took the first prize of £15 in the class of heifers in-calf or in milk not exceeding three years old, beating Mr. Arkwright's Lady Leicester, and two heifers of Mr. James', both of which were commended. We thus wrote in our report of the meeting: "There was a

small but excellent class of heifers in-calf, where the Leicester awards were reversed; Mr. Tudge's Royal third being now put first, and Mr. Arkwright's first being here next best. And we certainly prefer the second reading, as no doubt the Hereford awards at Leicester were very open to comment; or, at any rate Diadem must have vastly improved in the interval, for she is at this showing by far the better looking of the two, being really handsome."

At the Manchester Meeting of the Royal Agricultural Society of England, Diadem took the first prize of £15 for heifers in-milk or in-calf not exceeding three years old, beating Mr. Rogers' Queen of the Valley (2nd prize), Her Majesty's Duchess of Bronté (3rd prize), and Mr. Arkwright's Lady Leicester (highly commended). As we then said, Diadem had "continued to improve, being now a very sweet, straight heifer, of particularly fine quality." The judges here again "considered the two-year-old Hereford heifers excellent representatives of the breed."

The Adforton herd was in great force at Manchester, where Mr. Tudge took first prize for bull calves, second for cows, and first for heifers in-calf, yearling heifers, and heifer calves. As we said there and then, "no doubt Mr. Tudge is a famous doer by his stock, for he shows in high flattering condition; but he would seem to have discovered the secret of knowing just when to stop, as his animals neither fade nor grow gaudy." Diadem and the bull calf, Ostorious, were purchased at Manchester by Lord Southesk, and are now located at Kinnaird Castle, in Forfarshire, where they are replacing the black Polled with the Whitefaces.

EARTH COMPOSTS.

BY CUTHBERT W. JOHNSON, F.R.S.

The deodorizing power of earth has been well known from a remote period. Every cat, where it used a rough kind of earth-closet, evinced this fact. This knowledge was not confined to the Old World. The natives of Northern America devoured the skunk, a most intensely stinking animal. Before, however, they cooked it, they removed the odious smell by burying it for a time in the earth. It is therefore absurd to announce as a discovery the use of earth as a deodorizer. Still more absurd is it to endeavour to promote the introduction of earth-closets by denouncing other, and far more extensively practicable modes of providing for the excreta of crowded districts.

At a season when much carting of manures is going on, it may be useful if we recur to a few facts relating to the formation of earth composts.

It is now some years since Mr. Huxtable and Mr. H. S. Thompson directed Professor Way's attention to this very important question. Mr. Huxtable had, in fact, made some experiments in the filtration of the liquid manure in his tanks, through a bed composed of an ordinary loamy soil. He found that after its passage through the filter-bed the urine was deprived of colour and smell; in fact, that it went in manure and came out

water. This of itself, as the Professor remarked, was a singular and interesting observation, implying, as it did, the power of the soil to separate from their solution those organic substances which give colour and offensive smell to putrid animal liquids. The Professor saw at once the importance of ascertaining the extent of this deodorizing power. He commenced a series of experiments, the results of which are recorded in the 11th volume of the *Journal of the Royal Agricultural Society*, p. 313 (see also a paper by Mr. H. S. Thompson, *ibid* p. 68). He tried the effect of passing some fluid from a London sewer through a filter composed of 4 lbs., equal to six inches' depth, of a red soil, from the Berkshire estate of Mr. Pusey. This soil contained in 100 parts—

Water	...	...	...	...	...	20.56
Vegetable matter	...	...	...	...	...	6.17
Sand and clay	...	...	...	...	...	59.00
Carbonate of lime (chalk)	...	...	...	...	...	5.94
Oxide of iron and alumina	...	...	...	...	...	7.90
Potash	...	...	...	...	...	0.31
Soda	...	...	...	...	...	0.12

The following table gives the contents in grains of an imperial gallon of this sewer fluid, before and after it had been filtered through the soil:



Diadem.

A Friesian Herford heifer, the property of Messrs. J. & J. Condit, of Alderbury, Wiltshire.

London: Published by Rogers & Telford, 265, Strand, 1870.

	Before.	After.
Organic matter and salts of ammonia	301.83	—
Organic matter	—	60.58
Sand and detritus of the granite from the streets	90.69	—
Soluble silica	13.51	—
Phosphoric acid	10.44	—
Sulphuric acid	14.73	—
Carbonic acid	15.59	—
Carbonate of lime	—	104.98
Lime	24.53	—
Sulphate of lime	—	17.49
Magnesia	2.87	—
Peroxide of iron and alumina	6.20	—
Potash	48.13	—
Soda	1.51	—
Common salt	33.24	52.73
Chloride of calcium	—	8.89
Magnesium	—	.67
Loss on analyzing, &c.	—	3.16
Total	492.26	248.50

It will be noted from the result of this analysis that a considerable portion of the organic matters of sewer-water remains in the water which passed through the filter. Now in the sewage-irrigated meads near Edinburgh a steam engine has been erected to pump on to other meads the water draining from the meadows previously irrigated with the fluid as it flows from the sewers.

The alumina of the soil was found by Way to be the chief deodorizer, the silica and the salts of lime being far less powerful. So that, as he observed (*ibid.*, vol. ix., p. 374), this newly-discovered property of soils explains the variations in manuring operations which are made to suit the nature of the soil. Clay has been shown to be the active substance in retaining manure, and sandy and gravelly soils not possessing a sufficiency of clay are expected to be less retentive of manure. Such is the fact, and soils of this description are said not to "*hold manure*." On such soils manure must be applied more frequently, and in smaller proportions than on stiffer soils, where, owing to the retentive power of the clay, the manure for several crops may be safely deposited.

If these inferences are correct, the only way of permanently improving a sandy soil is to clay it; and it is notorious that the light sands of some parts of Norfolk are only made to bear remunerative crops by copious dressings of clay. And it may be observed in passing, that where a dressing of clay is required, it very often happens that the substance at hand is a marl, of which more than half is carbonate of lime, which (that is, the carbonate of lime) cannot be supposed to be a substitute for clay, inasmuch as although it is capable of improving the mechanical texture of a sand or a gravel, it has none of the chemical properties of combining with manure which clay possesses. In Norfolk this is frequently the case, and it would often pay the farmer to go a longer distance for real clay, rather than use that of inferior quality which lies under the surface. The composition, indeed, of the clays to which the landholder has access is of very great importance; for not only does this vary in most neighbourhoods, but the same stratum also is very different in composition at different depths. We may usefully recur to the result of a few of the examinations which have been made of various clays. For instance, an apparently uniform clay being analyzed by Professor Phillips (*ibid.*, vol. vii., p. 258), was found to contain—

	At 22 in.	At 54 in.
Silica	59.0	72.9
Alumina	23.5	13.4
Peroxide of iron	8.1	6.6
Carbonate of lime	1.0	0.8
Water, sulphate of lime, &c.	4.8	5.5
Carbonate of magnesia	0.0	9.8

The following is the analysis, by the late Professor Johnston, of four varieties of good clay, 1 being from Cattle Hill, near Dumfermline; 2, from Sherburn Hill, near Durham; 3, from Tullarone, county of Sligo; 4, from Portobello, near Edinburgh (*Quar. Jour. Ag.*, 1847, p. 81)—

	1.	2.	3.	4.
Silica and sand	64.14	61.09	66.16	53.95
Alumina	13.54	19.91	16.08	25.55
Oxide of iron	7.57	6.75	8.38	8.08
Lime	1.90	3.36	1.88	0.88
Magnesia	1.31	2.38		1.61
Potash	1.86	2.33	1.83	1.54
Soda	0.68			
Sulphuric acid	1.37	—	—	—
Carbonic acid	—	3.68	—	—
Organic matter and water	7.82	—	4.89	8.60

It was in the course of his experiments upon the action of burnt clay as a manure, that Professor Voelcker examined the composition of a clay in its natural state, and after it had been exposed to the action of fire (*ibid.*, 1851, p. 105). He gives the analysis of portions of clay examined in four different states, viz.: I., in its natural state, as obtained from the new red sandstone, at Huntstile, near Bridgwater; II., the same clay, after being exposed to a dull red heat for half-an-hour, in a *closed* crucible; III., the same clay exposed to a similar heat in an *open* crucible; IV., the same clay exposed to a full red heat for three hours, in an *open* crucible. The results will be found in the columns marked in the following table:

	I.	II.	III.	IV.
Water	5.539	9.160	9.200	9.300
Organic matter and water of combination	3.621			
Insoluble matter (in hydrochloric acid)	84.100	80.260	81.845	85.309
Soluble matter, consisting of soluble silica	1.450	1.390	1.580	1.150
Oxide of iron and alumina	3.070	8.245	6.092	2.970
Carbonate of lime	0.740	0.480	0.560	0.188
Potash	0.269	0.941	0.512	0.644
Soda	0.230	0.336	0.314	0.104
Phosphoric acid	0.380	0.165	0.128	—

The reader will remark how materially, by burning, the proportion of soluble potash is increased in the clay; and to this increase the Professor seems to attribute a chief good result from clay burning. He says, "The agricultural value of clay chiefly depends on the proportion of potash and soda which it contains. Potash is an essential element in all ashes of plants, and acts as a most powerful manure. The high price of the salts of potash unfortunately prevents their more extensive application in agriculture, and plants are therefore dependent, in a great measure, on the natural sources. The chief source of potash in ordinary soils is the clay, which forms part of almost all soils, from which, in gradual decomposition, potash is set free, and made available to plants." Some valuable experiments were made upon the clays adapted for tiles, by Professor Johnson (*ibid.*, 1847, p. 81). He found various infusible or fire clays to be composed: 1, from Cool Island; 2, from Stourbridge; 3, from Stanington; 4, from Howth, as follows:

	1.	2.	3.	4.
Alumina	30.8	38.8	40.9	23.3
Silica	46.2	46.1	43.0	67.96
Perox. of iron and manganese	8.4	—	—	1.19
Lime	—	—	—	1.8
Magnesia	—	—	0.1	0.63
Potash	0.4	—	—	—
Water	14.3	15.1	14.7	3.79

Our tile and brick clays, adds Professor Johnston, are usually red naturally, or become so when burned. This shows the presence of oxide of iron, one of the ingredients which tend to make them fusible. Many also contain lime, some in very considerable proportion. Magnesia is by no means uncommon, while potash and soda are always present in quantities more or less appreciable. It is the presence of these ingredients which gives to our bricks and tiles the burned, glassy, swollen, and porous appearance they occasionally present, and which at times, in the hands of a careless or unskilful fireman, causes them to run together into one melted mass.

Not only the ammonia of manure but the soil absorbs also the ammonia and other matters deposited in rain-water, and from the vapour contained in atmospheric air. Hence, as the Professor remarks in another place, when reporting his experiments on the water flowing from our land (*ibid.*, vol. xvii, p. 188).

The advantages to the soil of removing the land-water, which prevents the free circulation of the atmosphere, is self-evident. "Every acre of ground," adds the Professor, "which allows water to percolate freely benefits equally by the nitric acid and ammonia of rain. But whence comes the additional luxuriance which vegetation puts on when the land is abundantly worked? whence the Lois Weedon crops? Obviously Mr. Smith cannot be satisfied with the ammonia of rain; he must have some from the air also; and he gets it from the air in a far greater quantity than the rain could furnish. In fact (adds Mr. Hoskyns), he habitually expresses his obligations to *the dew*, as a more steady benefactor than the rain, in much the same terms as might express the relation of 'daily bread' to an occasional feast. But still the soil can absorb more ammonia than it acquires from the rain and the atmosphere, for Liebig calculates (*ibid.*, p. 287) that the soil of an acre 12 inches deep can take up of ammonia, in addition to that contained in it from long exposure to the air—

Thin land of Dorsetshire	90.880lbs.
Light red soil, Berkshire	9.420 "
Stiff white clay	17.040 "

We have in this paper directed our attention to the action of clay upon decomposing or ammoniacal manures. But another important portion of our inquiry is as to the fertilizing matters which certain earthy substances, in their natural state, contain. In many cases, the earths obtained from pits, or the sea shore, or sides of rivers, are valuable manures, from the calcareous matters they contain; the mud of other rivers abound with organic matters to an extent of which the adjoining landholders are little aware. Thus, the mud of the River Thames has been very recently carefully examined in several places between Chiswick and Crossness. It was in giving evidence in last July, before the Commissioners appointed to investigate the Thames impurities, that Dr. W. A. Miller stated that in conjunction with Dr. Olding he had analysed samples of mud taken from various portions of the bed of the Thames, from that of Barking Creek, and from the bed of the Roding above Barking town. The mud taken at Barking Creek contained 16.2 parts of organic matter, and 100 parts of this organic matter contained 8.1 parts of nitrogen. The proportions in the mud in the Roding above Barking town were as follows: Organic matter 17.8; nitrogen, 8.17. The average character of six samples of mud taken from the Thames between Chiswick and Westminster was—organic matter, 15.8; nitrogen 8.05, insoluble and organic matter 84.2. Six samples were also taken from the London, St. Katharine's, East and West India, Commercial, and Victoria Docks, and these gave the following figures: Organic matter 15.8, nitrogen 8.07, insoluble and mineral matters 84.2.

Samples from the deposits in the reservoirs at Barking and Crossness gave results as follows: Barking: Organic matter 58, nitrogen 4.27. Crossness: Organic matter 37.1, nitrogen 4.51. From the Horse End a sample of mud showed less organic matter than any of the others, the figures being: Organic matter 7.2, nitrogen 2.51. From the bank near the works of the Chartered Gas Company the sample taken gave the following analysis: Organic matter 14.4, nitrogen 2.84. At Barking town quay a sample of mud was taken which contained 25.4 per cent. of organic matter.

Such a mud as this, when drained, would make a capital compost with farm-yard manure; and would, in fact, if applied by itself, be an enricher of many soils.

Then, again, we have to consider what are far more available, the earths which are so generally found on our own farms. It was in a valuable prize essay "on compost heaps" that Mr. J. L. Morton had occasion to remark (*Trans. High. Soc.*, vol. xiv., p. 435), (and what he remarks I need not even attempt to give in any other language,) that on every farm quantities of earth, road-scrappings, ditch-scurings, and similar substances are more or less available for earth composts, and may be profitably employed. By the action of the plough on good soils more or less earth is always being deposited on the turning ridges. If this soil is allowed to accumulate for many years a much greater loss is entailed upon the farmer than he may have any conception of. Take a head and foot ridge, each say 200 yards in length and 15 feet broad, with a depth of deposited soil of 15 inches, and we have 833½ square yards. Allowing that a field 200 yards broad has ridges 400 yards in length, it will contain 16 acres 2 roods 4 poles, and with the turning ridges at each end, covered with carried soil to the depth above mentioned, there will be sufficient earth to cover the whole surface of the field to the depth of nearly half an inch.

This is no extreme example, for very often turning ridges are covered with a greater depth of carried soil than 15 inches, though the ridges are less than 400 yards in length. A top-dressing of half an inch of good soil will often change the entire nature of a poor dry field, and in any instance will make a great difference in the quality of land.

In the winter of 1846, from the foot ridges of a field of rich black soil, having considerable inclination of surface, I removed 500 cart-loads of earth little inferior in quality to police manure. The field had laid in pasture for more than 80 years, having previously been regularly cultivated. The soil in the foot ridge being partly alluvial and partly plough-carried, had remained the whole time the field was in grass, and by long exclusion from atmospheric action had become quite brown in colour. Here then were 500 loads of valuable soil locked up in a foot ridge for more than 80 years without doing scarcely any good to the farmer. A large portion of the earth so obtained was applied at once to the surface of a cold thin clay soil, and the great improvement it made on the herbage clearly proved that the loss sustained by its long dormancy had been considerable.

"In the autumn of 1849," continues Mr. Morton, "I had a better opportunity of testing the advantages which may be derived from mixing soil with different kinds of manures. A sheet of policy ground extending to about 60 acres had been in pasture for many years, and for various reasons it was deemed expedient in 1849 to allow it to produce a crop of natural hay. To prevent the deterioration of the soil it was necessary after the removal of the hay crop to give a top-dressing of various kinds of composts. On thinking of the various substances which might be used with advantage, my attention was directed

to a flat alluvial spot of ground in the centre of a plantation adjoining the land about to be top-dressed. A small run of water had formerly passed through the centre of this flat, and having periodically left deposits of rich soil it had accumulated to a depth of about 4 feet. It was covered with half-grown hard-wood trees; but as they were tolerably far apart, a great quantity of earth could be removed without disturbing the roots. Several hundred cart-loads of this were removed, and laid on the pleasure ground in heaps of from 8 to 10 loads. This was mixed with short manure (partially mixed with byre and stable-dung), lime, and soot. In the manure compost a layer of soil was laid at the bottom 6 or 8 inches thick, and over this was spread quite loosely a 6-inch coating of dung. With alternate quantities of earth and dung, the former about 9 and the latter about 6 inches thick, the heaps were drawn to a ridge like a narrow potato pit. After being mixed with soot at the rate of 1 cwt. to every 5 cart-loads, and turned over once, it was applied at the rate of from 12 to 18 tons per acre, according to the state of the land. Taking 15 tons as the average, the cost per acre was as follows:

Digging and carting 10 loads of soil	£0	3	4
5 loads of police manure at 4s. 9d.	1	3	9
3 cwt. of soot at 1s. 6d.	0	4	6
Mixing, turning, and carting, &c.	0	8	6
	£2	0	1

For this sum per acre a top-dressing was applied, which, along with the lime composts, so much improved the pas-

ture, that the annual rental was subsequently raised 10 per cent. above its former letting price, and left 12 per cent. on the outlay.

A large quantity of soil so obtained was also used with caustic lime, the composts being prepared in the usual manner. The proportion of lime to earth was as one to four, and with the former mixed up in a hot state an excellent compost was prepared at an expense of—

12 tons of soot, digging, and cartage	£0	4	0
3 tons lime shells at 12s. 6d.	1	14	0
Preparing, turning, and carting	0	8	6
	£2	7	0

From careful observations of the appearance of the pasture for several years afterwards, the lime compost seemed to give the most satisfactory results.

Such are a few of the important questions which relate to the use of earth composts, and we must not fail to remember that there are few clays, or sands, or calcareous strata, which are not valuable as dressings for our land. The chemist finds that almost all of them contain small portions of organic or ammoniacal substances; that they can often add to our soils a needed supply of other saline matters which are essential constituents of our cultivated plants; and, moreover, that they have the great advantage over organic manures, that their beneficial influence is not confined to at most a single rotation of crops, but that they *permanently* increase the fertility of the soils to which they are applied.

A REMEDY FOR RABBITS.

"You, Mr. Editor, long before my name ever appeared in print, did good service to the cause by speaking and writing against the game-laws. Do for once give us your advice as to how we ought to act and for what we should ask. Sketch out the sort of legislative enactment that will preserve legitimate sport, and at the same time put an end to the 'unmitigated evil of the over-preservation of ground game,' and you will confer a debt of gratitude upon thousands of suffering tenants, and cause the never-ending obligations of your faithful servant,—CLARE SEWELL READ."—"I hope, Mr. Editor, that you will put us in a way to obtain a better state of things, and if your proposition has the approval of the majority of farmers, we must all give up our pet notions, and go with the majority, as we shall get nothing unless we are unanimous in what we ask for." So wrote Mr. George Smythies, of Shropshire, in our Paper of last week, as Mr. Sewell Read from Norfolk had written in our previous number. We the more readily accept this complimentary challenge, and return thus early to the subject from the way which the question is still making throughout the country. If the Land difficulty of Ireland should come on, as it must, for grave consideration during the next Session, so most assuredly should, as most probably will, the Game difficulty of England also command the attention of the legislature. Both the gentlemen whose letters we have quoted turn to the proceedings of the Scotch farmers in evidence of how little may be expected from the want of unanimity which has characterized their deliberations. As Mr. Read put it, "The Scottish Chamber, divided into two exactly equal parts, is to wait upon the Lord Advocate to help him in preparing his promised measure for amending the Scotch game laws." And on Wednesday last this deputation waited on the Lord Advocate accordingly, when strange as it may sound, nothing would appear to have been more unanimous

than the recommendations they offered. Mr. Wilson the President on the one part, and Mr. Scott Skirving, as leading the opposition, went dead against the hares and rabbits. Mr. Wilson said: "There was what he might call a taunt with which they were constantly met when they complained of the grievances under which they laboured and the evils that resulted from the operation of the game laws. The taunt was this—'But you go and sign leases in which you make yourselves to blame for that.' Well, that just led him to impress upon his Lordship that the case was one in which they required to get redress by public means. The farmers really could not defend themselves." And Mr. Scott Skirving followed this up by declaring "he was entirely in favour of more stringent powers being given to the farmers to kill hares and rabbits, and of making it illegal for two men to enter into a contract by which the occupants of the land were to give up that right."

Now here is something to go on, as something that should be agitated for alike by the English and Scotch farmers. Let us make it illegal to afford the rabbit, more especially, any protection whatever. Let it be made impossible for a landlord to "reserve" such vermin; and let any man be at liberty to destroy these pests in any way he can. A Norfolk farmer, says with reference to the privilege given by Lord Middleton to his tenants to kill rabbits, if they do not resort to unfair means, "perhaps Lord Middleton's agent would be good enough to inform us what are unfair means of destroying such vermin." Precisely so. That monstrous clause in the model agreement of the Royal Agricultural Society defines the unfair means as a *dog*, while in another agreement it is a *gun*—and so forth. Then, at Bradford-on-Avon, the other day, four or five labourers were taken up for trying to get a rabbit out of a hole with a hooked stick. According to the keeper, "Three of the Miseses worked for Mrs. Wiltshire, the tenant. The land

was Mr. R. P. Long's, but Mr. Forbes, had the shooting. Witness saw the defendants in the ditch for nearly half-an-hour. There were plenty of rabbits all along that hedge." Here we have all the evils of the system. The shooting is let to somebody else, and the farmer's men dare not kill a rabbit, although there were of course "plenty of rabbits all along." Whereas, had the Mizens been killing rats or mice, or weasels, nobody would, as nobody could, have interfered with them. Nevertheless, rabbits do a deal more damage to the farmer than rats or mice or weasels, and to the level of rats and mice must they be reduced. As Mr. Scott Skirving says, it shall be illegal for any two men to enter into a contract to the contrary. Surely Mr. Sewell Read and Mr. George Smythies will allow that we may be unanimous so far, or at any rate we may command a majority when settling upon something to "ask for."

But we must go further still, and still with something like unanimity. On the day previous to the deputation waiting on the Lord-Advocate in Edinburgh, the game laws had been discussed at Birmingham, where Mr. Kidger, a farmer, said: "He had a right to destroy the rabbits. He planted a field in Feb., 1867, and on one side of it there was a wood, into which he had no right to enter. The rabbits came from this wood and destroyed three acres of the field near the wood, and also destroyed bits all over it about the size of that room, and the consequence was that in the last week in August he had suffered a great injury." And, again: "they talked about catching rabbits. He could not catch them—he did not know how. No man had a right to go on to another man's land to fetch game, and very frequently the vermin which did the most mischief came from adjoining lands." This is all terribly true; while, as to compensation, we may say here, as the late John Grey, of Dilston, said before a committee of the House of Commons, "I have never yet, where valuation and arbitration were resorted to, seen the farmer get one-half of what I consider he was entitled to." The rabbit then must be regarded as a nuisance, for the destruction of which men should be rewarded rather than punished; as of course there must be some penalty provided for those who harbour or encourage such nuisances. In towns and cities if a man pursue a calling to the injury or annoyance of his neighbours, he lies himself open to an information,

upon which he can be convicted. And some similar means must be taken to put down the nuisances of a country life. The rabbit is a nuisance, an animal we will say in the outset that is beyond the pale of the law, and anyone breeding or preserving rabbits is doing an injury to his neighbours, and must be dealt with accordingly. Again, it is to be hoped that we may come to an unanimous opinion as to what we should ask for. Lord Leicester in the upper, and Mr. Sewell Read in the lower House have declared that there is no farming against rabbits, so that any such reformation as is here proposed should carry with it the best of introductions.

Mr. Read "quite agrees with us that much may be done by talking the matter over;" but we confess that we begin to tire of mere talking. The President of the Scottish Chamber declares, indeed, that "the evil is not diminishing, but is rapidly on the increase. The number of proprietors preserving game was gradually becoming greater." And to meet this growing abuse, we must not merely make new laws but repeal others now in force. The correspondent of a Suffolk paper, writing on Wednesday last of some grand doings in his district, says, "At one of the battues, and probably at all of them, three or four of the county police were stationed day by day at different places on the outside of the wood to take care that none of the slaughtered game was taken away." Here is something more to be unanimous about, as most assuredly a large majority of the farmers will be ready to go against that infamous Game-keeper-Police Act, the most unwarrantable burden in the way of unfair taxation which has been inflicted for many years.

The Vice-President of the Council has, before this, called the attention of the House to the game evil, although Mr. Forster did not then hold the position, nor was he so well known as he has since become. Mr. Sewell Read says "more important and immediate subjects will stop the way of legislation," but we know of no question more important so far as the agriculturist is concerned; while we think, further, that the present Government is by no means indisposed to deal with the difficulty. The Lord Advocate said in Edinburgh, on Wednesday, that he would not fail to bring the matter forward.—*Mark Lane Express.*

THE MEMBERS IN COUNCIL.—R.A.S.

The Manchester Meeting of the Royal Agricultural Society of England in July last closed on the Saturday, and on the Monday, after protesting against the unwarrantable length to which the stock show had been extended, we went on to speak thus: "Even beyond this the Council, not content with screwing every half-penny it could out of the visitors at the expense of the exhibitors, was good enough to let others take a part in the plunder. In fact, the conduct of the proceedings seemed to be mainly in the care of the Local Committee, which coolly broke through the rules of the Society, and started exhibitions within exhibitions, and overlaid the show itself with absurdities, only to get more crowns, half-crowns, and shillings out of the unfortunate public. The Council of the Society was careful to announce that it had nothing to do with these fooleries beyond the chief officers gracing the performances with their presence. These distinguished personages rode or marched in procession at the head of the lists like a goodly company of Trumpeters, and incessantly testified to the great kindness and invincible energy with which the Local Committee devised schemes for making capital out of the

Royal Agricultural Society. A bonus of a thousand pounds or two should thus be no such bad a speculation in the end, the more especially when dealing with men who appear so ready to sell their rights for a meas of potage as the executive of these rural interests." We further characterized the extra charge imposed for admission to the jumping-ground as "a pretty little swindle," and we stated that this job would have come prominently before the General Meeting as held there and then, had not the mob broken in and upset the proceedings. On the Thursday, however, in the recent Smithfield Show week there was another General Meeting when this matter did come in for some discussion. Mr. T. Willson (from Leicestershire) said several members had determined to withdraw from the Society if such a business were ever repeated. They considered it a disgrace to the Society that such a thing should be allowed in order to compensate or please a Local Committee. It was quite beneath the dignity of such a Society—and so forth. Mr. Jonathan Grey, a man of much experience in this way, said that if the horses that jumped competed for the prizes of the Society, it was beneath the dignity

of the Society to allow them to go out of the yard for that purpose; and Mr. Duckham thought that the members of the Society had a right to see everything that was entered in the catalogue during the hours the exhibition was open, instead of being caught, as it were, in a trap, and he hoped that the Council would not be dictated to again by a Local Committee. Of course, all this is so palpably true and self-evident that the interest at once centres over any answer or explanation that could be offered for so monstrous an abuse or delegation of power. This, though, was very easily arrived at. Mr. Torr said that Mr. T. Willson had fallen into an error; Mr. Jacob Wilson that Mr. Duckham was labouring under a mistake; and Mr. Thompson that the discussion should not be continued. For our own part, we can see no error nor mistake, save such as was committed by the Council of the Society, while we consider the discussion of any such mistake as coming peculiarly within the province of a General Meeting. Mr. Torr said the jumping business was the result of a *private* arrangement. Was there ever such an absurdity advanced! How could there be a private arrangement with a public body? A private arrangement that interfered with a public exhibition, and that went to establish another public exhibition! The feeling of the Council, said Mr. Torr, was decidedly against the jumping, and yet the Council countenanced such a business on its show-ground. But then, as Mr. Torr went on to explain, their Manchester "friends" made this a *sine quid non*, from which, of course, it must be inferred that a Local Committee is the superior power of the two. The Council may be decidedly against bull-baiting, but if a Local Committee make this a *sine quid non*, a bull must be taken out and baited accordingly. Then Mr. Jacob Wilson, with curious inconsequence, argued that a gentleman who paid his entrance saw everything in the yard that was entered in the catalogue, although in point of fact it was not so. On the great day there was a time when a man who paid his entrance could not see everything that was in the catalogue, if, more especially as a member of the Society, he had quite as much right to this privilege as even Mr. Jacob Wilson himself. It was, then, the rather Mr. Torr who was in error, and Mr. Jacob Wilson who was very much mistaken; while if Mr. Thompson would stop such a discussion as this, it must be only on the plain understanding that he and his fellows "will never do so any more."

In other ways the tone of the last General Meeting of the Royal Agricultural Society of England was very healthy and encouraging, as in strong contrast to the pitiful exhibition of last Christmas. It was there that a Mr. Sidney was suffered to attack the newly-elected Editor and Secretary after this fashion: "He (Mr. Sidney) now supposed that the motto of the Society or of the *Journal* was to be Science *without* Practice. He presumed that the Journal Committee had undertaken the duty of educating the new Editor. Many clergymen undertook the education of young men for a certain consideration. In the present case he presumed the Journal Committee were to educate the Editor; only, instead of his paying them for his education the Society was going to pay him £800 a year for learning. The Journal Committee would, he supposed, be seen going about like a hen with one chicken, instructing this gentleman in the elementary knowledge of agriculture." And over such impertinances as these there was of course "loud laughter" at the expense of the new man whose deficiencies and incapability were so smartly shown up. But within twelve months how great is the revulsion! If Mr. Sidney attended the General Meeting last week he must have heard that the best Editor that the *Journal* has had since

the days of Mr. Pusey is the gentleman whose qualifications Mr. Sidney, without of course knowing anything of them, thought proper to disparage. Surely never was there a contradiction so straightforward or so complete. As we said at the time, we believed that the Council or the Committee had selected the best man for the difficult post he was called upon to fill, if the election itself were scarcely so methodically conducted as it might have been. And we said this in the teeth of the Old Practical Farmers who were writing up their own sons for the place, and of the middle-aged book-worm farmers who were complacently quoting the names of themselves and their connexions as about the only pair of heaven-born Genii to whom such a duty could be entrusted. We did so immediately on its appearance, but we may here again take, as Mr. Sewell Read did, "the opportunity to express his sense of the marked improvement exhibited in the last number of the *Journal*, which he considered more practical and useful than any number that had been issued for a great many years." "Science *without* Practice," said Mr. Sidney of the new Editor in 1868, and "most practical and useful," says Mr. Sewell Read in 1869, of the new Editor's first number. Need we comment further, or need we venture on any comparison as to the practical authority of Mr. Sewell Read and of Mr. Samuel Sidney?

As regards the Oxford Meeting there is one other matter that requires looking to. Mr. Coleman, indeed, called attention to the want of arrangement in the implement trials. Judges are called on, they know what to do, and a day or two is often cut to waste before they can get to work. There would seem to be little or no order in keeping off the crowd, and there is generally some hazy ignorance observable amongst the officials as to whether catalogues can be supplied or not. Of course implement catalogues should be available to the public so soon as the implement trials begin, just as the stock catalogues are on sale when the judges go to work. Then the implement awards should be published through the Secretary or some responsible officer, and not left to anybody who chooses to volunteer for such a duty. Last year some very absurd mystery was maintained as long as possible, and it then transpired that the announcement of the implement awards rested very much with one of the judges, who is himself occasionally employed on a newspaper, and who communicated with such as he thought fit. All this is very wild work, but we have no doubt that as the new Editor gets into his collar he will see that a better system is adopted.

At the meeting of the Council on Wednesday Mr. Sanday, who acts perhaps more frequently as a judge than any other man in England, very becomingly moved a resolution to the effect that judges who are members of the Council should be paid their expenses when acting at the Royal Meetings. Mr. Milward, however, went more directly to the point when he moved that Mr. Sanday and Mr. Bowley be paid for their services at Manchester! The subject has been deferred, but if this retrospective measure of remuneration be carried, of course it cannot end here. Mr. Druce must be paid his expenses at Leicester, and so on, or rather back, until we get to Oxford once more. The rule, or bye-law, seems to us to work very well as it is. It must be something of an honour to be on the Council, and it must be something more of an honour to be a Royal judge; as even further, there are two or three members of the Council, who are continually during the show season acting about as judges, although, according to pretty general opinion, their qualifications in this way are not so extraordinary.

THE LATE MR. GEORGE SAVILLE FOLJAMBE.

There is scarcely a man in the Midlands, for whom the name of "George Foljambe" has not a familiar sound. The older ones remember "The Squire" of Osberton, in his scarlet-and-velvet cap, cheerily picking it out over the clays, with his Sparkler, Herald, and Harbinger, of the Ranter blood, to the fore, while the younger ones only knew him in his green coat and white hat, &c., his once-piercing dark eyes sightless and downcast, leaning on his son's or some old foxhunter's arm at Tattersall's, or "touching" the prize sheep at a show. Like two other great sportsmen of very different mould, the late Lord Derby and Earl Wilton, he was born with the century. His family tree had its tap-root in an old soil, as the deceased could trace his pedigree up to Sir Godfrey Foljambe, Knight of Walton, and Sheriff of Derbyshire in 16 and 20 Henry VIII. His grandfather's estate of Osberton became his own when he was only fourteen; and as soon as his majority was attained, he took to foxhounds. Bad-scenting country as the Grove may be, he did not care to roam elsewhere, and only twice for a short period he was beguiled away to Sir Tatton's and the Burton. The young master threw himself into his work with all his heart and soul. He entered his young hounds at Grove, Scofton, and Whitwell Woods, and he "finished the season's tuition" in the limestone country, on the Fitzwilliam side, when the clays were all baked.

At the time when he first carried the horn, Tom Sebright was still with Mr. Osbaldeston in Leicestershire; Charles Davis had not yet been gazetted as huntsman of the Royal Buckhounds, and received his King's orders to "breed them so fast that they can run away from everybody;" Mr. Ralph Lambton, with his boxwood horn, and his *Forard! Yi Haro!* and the Earl of Darlington on his grey Ralph were the Nimrods of the North; and John Scott was busy putting a polish on the Houldsworth lot in the quiet glades of Sherwood Forest. It was a day of mighty fox-hunters—of Tom Smith, John Warde, Musters, and Sir Richard Sutton; but the Young Squire of Notts soon made his mark, and as years went on, "Foljambe and Foxhunting" was a toast which always stirred the blood. The best kennels were glad to come to Grove for a change of blood; and many a quiet little parliament was held on its flags, and matches and sweepstakes for a roll of scarlet cloth decided, for which stakes had been made at Boodle's. If a master was forming a pack under difficulties, or had a loss in the middle of the season, Mr. Foljambe could generally help him out, as Mr. Tom Hodgson used to say, with "some waifs and strays." For a man who loved the sport so ardently, and cared only to watch the working of hounds, blindness was indeed "a sorrow's crown of sorrows," but marriage to his first love helped to lighten the blow, and break the double solitude of his life. He could still ride to cover, led by a servant, and listen when "so cheerily they found him, so gaily bustled round him," with something of his old rapture.

About racing he troubled himself very little; and although he always entertained Earl Zetland (who was his confederate during his three seasons on the turf), Mr. Williamson, and a large party at Osberton during the Doncaster week, he seldom cared to go with them, and spent the day with her ladyship, walking down to Scofton farm, or knitting garden-nets.

Later in life, Mr. Foljambe became more interested in his Scofton farm, and always kept well abreast of the times. With a difficult soil to till;

"He knew the auguries of coming change,
Of other ministrants in shrine and grange,"

and liked to have every machine about him of the best kind. No stacks were better thatched and trimmed; and in the driest season his agent, Mr. Woods, could invariably show a luxuriant green crop. Sheep were long his prime delight, and he loved to handle them as carefully as if they were a foxhound on his trial for the second draft. Nothing escaped him; and Mr. Jonas Webb was wont to say that he wished he could be made judge at the Royal and Smithfield Club for the term of his natural life. He had a flock of both Southdowns and Leicesters on his Park. The former were his favourites; but the latter for five years, in the teeth of very strong competition, took the gold medal or silver cup at the Smithfield Club. London and Birmingham were his Christmas fields, and this year he was not a little pleased when he heard that he had "split" Lord Walsingham

in the light-weight class of Southdowns and Lord Seades. Of late years, he had done a great deal with Shorthorns, and began his Booth blood by hiring bulls from Mr. Carr.

Robin opened the ball for him by beating, solely by his very superior handling, Mr. Fawkes's Friar Tuck, the first-prize Royal bull-calf, when they met at Doncaster; and Knights of the Bath and the Garter have made their names known since then in still wider fields. His white cow Cherry Blossom won a first prize at Smithfield last year, and proved to be in calf with a white heifer. About three months after calving she died very suddenly, and we believe that "The Squire's" last walk to his farm was to learn the particulars. This was about a month before his death, and he was soon afterwards seized with bronchitis, from which he could never wholly rally. Still, he retained his interest in all that was going on, and he saw both Mr. Woods and his herdsman shortly before his white ox and the Southdowns went to London, and inquired with much of his old zest if they seemed up to the mark. To those who had not seen him for some time he seemed to be gradually failing; but no great change took place until forty-two hours before his death, when he fell into a state of strange listlessness. Dr. Gull was consulted; but the strong man was bowed at last. He was buried at the church which he erected in his own park to the memory of his first wife, and on Thursday a large and sorrowful crowd—rich and poor commingled—from all the country round stood by "The Squire's" grave.

THE CIRENCESTER COLLEGE.—The College Club dinner was held at "The London," in the Show week, Mr. Holland in the chair. After dinner, a few remarks on one or two subjects connected with practical agriculture having been made by Dr. Voelcker, Mr. Kimber, and others, Mr. Coleman, who has held the only permanent appointment in connection with the club, that of Hon. Secretary, ever since the formation of the club at the Chester Meeting of the Royal Agricultural Society, intimated his desire to retire from his post and placed his resignation in the hands of the members. Although regretting his withdrawal, it was considered wise to accept Mr. Coleman's resignation, for there has been perhaps a too exclusive "old time" and "old student" character about the meetings, and to have appointed any one at present immediately connected with College, would have been working towards the other extreme. A most successful compromise, however, was made in obtaining the consent of Mr. Roberts to act as the future hon. secretary. This gentleman was at the College with the old staff and with the present; he holds the diploma of the College, and has only quite lately distinguished himself by obtaining the diploma of the Royal Agricultural Society. Mr. Holland being the chairman-elect for the Oxford meeting, it is to be hoped the club will now take a fresh start and go on and prosper.

The autumn session of the Royal Agricultural College closed on Friday, Dec. 17. The following awards were announced: Diploma to T. G. Lofthouse, York; W. W. Church, Circus, Bath; C. Wachter, Chislehurst Court, Canterbury; W. Searle, Chadlington, Oxon; J. Roberts, Boverly Tracey, Devon; H. G. H. Phelps, Ridley Wrotham, Kent. Scholarships were also awarded to Granados, Ashcroft, Willett, Smith, Ohrlay, and Woodgate. In a report, just issued by the surviving members of the Committee of Management, it is stated: "The college has not only become self-supporting (including payment of the interest of the £30,000), but there is a surplus available, after the payment of that interest, to provide a sinking fund for the gradual sinking of the debt. The Earl of Ducie, in furtherance of the views of his late father and of Mr. Langston, and to show his own appreciation of the advantages of the college, has kindly expressed his readiness to co-operate with us in the present attempt to place the institution on a permanent basis; we also confidently anticipate the co-operation of other noblemen and gentlemen who are interested in the extension of sound agricultural education. Our object is to bring to a close the provisional arrangements which were forced upon the college, when its affairs were in a very unsatisfactory state twenty years ago; and now, when its prosperity seems to be secured, to return to the proprietors the trust which they then committed to us, and to settle, with their concurrence, the future government of the institution."

ARTIFICIAL MANURES.

Of the several materials which vegetation requires for promoting successful growth, there is one class of bodies known as the silicates which have most important duties to discharge. These are all compounds in which silica enters into combination with other bodies. In general terms it may be said that as the phosphates give firmness and rigidity to the skeleton of the animals, so do the silicates give stability to the vegetable tissues, and thus contribute to the perfect development of the plant. In some cases we find that where exceptional strength is needed or special protection is necessary, there the silica is particularly abundant. The stalk of wheat is a special instance of this kind, for not only have the tissues of the plant received their ordinary supply, but a coating of silica surrounds and strengthens the straw and enables it to carry its heavy load.

An examination of the ashes of plants has shown the presence of silica in every cultivated plant, and that it constitutes a large proportion of the mineral matter taken up by growing crops. It is, therefore, an essential of successful growth. All our soils contain a large supply of silica, some in a condition readily available for vegetable growth, and much becomes so by the processes of cultivation and the action of manures. The question very naturally arises, is it necessary to make any special provision for the supply of a body which is so generally abundant? The inquiry is just, and shall be fairly met. To facilitate this explanation it should be stated that silica generally exists in our soils combined with alumina, in which form it is insoluble in water, and therefore so far valueless to vegetation. There are, however, various agencies by which it is made available.

Of these agencies the most influential is undoubtedly the carbonic acid which is carried into the soil in rain water. It is the most influential, because of its constancy rather than from any intensity of action which it exerts, but it must be regarded as the natural means for providing plants with silica. The silica being thus detached from its old association, now needs either potash or soda, with which to form a new alliance, and thus become prepared for entering into the plant. In fertile soils these bodies are present, and therefore the passage of rain-water, carrying a supply of carbonic acid into the land, changes the insoluble silicate of alumina into a soluble silicate of potash or soda, and thus gives the growing crop the supply that it needs. If, however, potash and soda are absent, this change does not take place, consequently the proportion of potash or soda in the soil indicates the proportion of silica which can thus become available. Thus, although silica is abundant in all soils, and these receive the carbonic acid which sets the silica free, still the necessity exists for the action of other bodies, which in many cases are very limited in their supply. The addition of potash or soda to such soils would in such cases not only supply potash or soda, but the silica would be carried into circulation at the same time. It is by no means probable that it will ever be necessary to add to the soil supplies of silica, but it is highly probable that provision may have to be made for rendering the silica which exists there available for vegetable growth.

Important as the silicates are to vegetation as food, there is another function which they discharge which is of the deepest importance for maintaining the fertility of the land. We recently laid before our readers an explanation of the important discovery made some few years

since by Professor Way, showing that there exists in some soils a class of salts which he named the double silicates. The action of these double silicates is peculiar, and their influence very important. It has been shown by his researches that these bodies really act as purveyors of ammonia. They have the power of absorbing from the atmosphere the ammonia which exists there, and retaining it until the crop requires it for the purposes of growth. The soil, therefore, becomes a net for arresting ammonia, and it is capable of doing so to an extent very much greater than we can ever equal by any addition of ammonia in the form of manure. If we consider that at the present prices ammonia cannot be purchased, from the cheapest sources, at less than £60 per ton, we must recognize it as a very costly ingredient in our supply of artificial manures. Is it possible that, whilst we are sending to Peru for guano chiefly because it contains an abundant and comparatively cheap supply of ammonia, that our soils can be made to gather large supplies from the atmosphere at a small cost? Of the fact there is no doubt. Let us hope that this discovery may no longer be allowed to slumber, but that it may be brought to bear in such a manner that it shall be of practical value to the farmer.

The action of these double silicates, although very remarkable, is easily explained. When silica is combined with alumina we get a silicate of alumina: when silica is combined with lime we get a silicate of lime. Under certain circumstances these two products combine with each other, and then we get a silicate of alumina and lime, which is one of the double silicates. There are several of these double silicates, for magnesia, soda, and potash can each take the same position as the lime, and form double silicates. The peculiar action of these double silicates is that when exposed to an atmosphere containing ammonia, or if rain-water carries a supply into the soil, the ammonia is immediately laid hold of. Whatever may be the second base which is in combination with the silicate of alumina, whether it be lime, potash, soda, or magnesia, it immediately vacates its position in favour of the ammonia, and thereby this very valuable fertiliser is held captive until the claims of vegetable life call for a supply, and then it is surrendered. It has well been described as the most valuable discovery in relation to manures which chemistry has given us. To be of practical value it must be carried one step further, and some means must be adopted whereby the farmer can at will increase his supply of double silicates; and in proportion as he does so he will be obtaining a supply of ammonia at a cost very far below what he has now to pay for it.

We look upon the presence of silica in artificial manures as valueless and undesirable, and this opinion is doubtless correct. We must not, however, forget that whilst it is impolitic to add to the soil a material which is already existing there in great abundance, it is one of the duties of an artificial manure to supply the agency for rendering the silica of the soil available whenever there is a necessity for it. In this way we shall supply silica by means of manure without adding it in the manure, and this is clearly the wisest policy. To complete the matter we must also adopt measures to increase the supply of the double silicates, then shall we have progressed satisfactorily in the use of artificial manures; but until this has been accomplished we must regard the work as very incomplete.

The employment of salt as a manure has been largely carried out in various parts; in some instances alone, and many more cases in admixture with other fertilizers. We have anything but clear or satisfactory evidence as to its mode of action, for the trials which have been made give us such variable results that at the present time they are conflicting and apparently contradictory. That the contradiction is only apparent cannot for a moment be doubted, for under similar conditions like results must arise. This regularity of action is confirmed by trials of other fertilizers, and there is no reason to believe that salt is any exception to this general rule. We shall briefly notice some of the circumstances which influence the action of salt, and in doing so it will be evident that all our difficulties may be traced to the varied functions which it performs rather than to any uncertainty as to its mode of action.

Salt is required by vegetation as a food, for the mineral matter of almost every cultivated plant which has been examined contains a supply. This may be taken as a proof that salt is necessary for their healthy growth. The chemical examinations which have been made upon the mineral constituents of plants, not only give us proof of its presence, but they also prove that some crops require more abundant supplies than others. The root crops, especially mangold wurzel, and the leguminous crops, beans and peas especially, all require a large supply. The grasses and the corn crops make smaller demands. We have, therefore, a great variation in the quantity of salt which is necessary, according to the kind of crop cultivated.

The variation is still further increased by the district in which land is situated. It has been stated, and with much truth, that the most successful instances of the use of salt as a manure are to be found in inland districts, whilst those applications which have been most unsuccessful have been observed in the neighbourhood of the sea-shore. The explanation of this is self-evident. In the former cases it is clear that in inland situations there is no natural supply of salt, and repeated cultivation consequently exhausts the land of this saline matter. As a natural consequence those crops which need an abundant supply fail to luxuriate, even whilst other plants, content with smaller supplies, for a time continue to yield a satisfactory produce. Ultimately these also fail to get all they require, and then they also decrease in their productiveness. When land has thus lost its productive powers from the exhaustion of the salt, an application of the needful article restores it again. If added moderately it may be enough for those crops which need small supplies, without being enough for other crops needing larger supplies, and thus another variation in the result is observable.

Land which is situated near the sea coast gets such a large natural supply from the sea breezes that the addition of salt as a manure becomes unnecessary, and if applied, little or no good results from its use. It is probable that it gets in this way such an abundant supply that it needs the addition of some other manure of stimulating character to utilize the supply. This we shall see more clearly subsequently, when speaking of the action of salt mixed with other fertilizers. It is, however, a fact that the beneficial results arising from the use of salt depend to a great extent upon the district in which it is used.

Apart from its value as food, salt has other duties to discharge in the soil. Of these the purification or sweetening of the land is probably the function with which all are most familiar. In some cases in which it has been used on grass land much of its influence is exerted upon the herbage, for by adhering mechanically to the leaves cattle and sheep eat it with greater avidity. Thus grass which has been neglected, and would not

otherwise be eaten, is trimmed down close to the ground, and is succeeded by a better herbage. This, however, is due to the relish imparted by the salt, which leads the stock to eat it, and is quite distinct from that sweetening of the land which arises when the salt gets into the soil. This action in the soil arises from the active manner in which salt decomposes decaying organic matter and renders the acids of the soil not only harmless to vegetation, but contributors to its fertility. This is especially observable when salt is used upon old and inferior pasturage which has been broken up. To attain the same result some farmers make a rule of using salt once every four or five years, before the land goes in for the root crops, and there is no doubt it has a very healthy influence upon the soil in addition to its being very welcome to the root crop.

Thus far we have noticed salt as a promoter of fertility, but it has another influence in many instances, and becomes a powerful check to vegetable growth. No satisfactory explanation has as yet been given to account for this result. It is, however, worthy of consideration, because in many instances this action becomes very desirable. We cannot give a better example than is frequently seen in the combined use of salt with nitrate of soda. Upon certain soils the action of nitrate of soda when sown upon a corn crop is too powerful. The growth is as it were over-pressed. If the straw be taken notice of it will be found longer and weaker than usual, and an examination of the ear shows the grains of corn wider apart than usual, as if some one had stretched the ear. Often we also find some grains deficient, as if the sap had over-run them altogether. When this arises it is found that a mixture of salt with nitrate of soda checks this over-growth—stops the excessive growth of straw—strengthens the straw, and secures a more compact and better ear of corn. It is in consequence of this action that nitrate of soda which has been adulterated with common salt gives a better result than a purer nitrate, and the discredit is thrown upon the wrong individual. As a rule, however, farmers prefer making their own additions of salt when such is found necessary.

In the case of land near the sea-coast which becomes freely charged with salt there is frequently observed a great sluggishness of growth. In such an instance the nitrate of soda, or some similar stimulant comes advantageously into play, and gives that impetus to growth which such lands require. Thus, whilst in the former instance the salt became a wholesome corrective of the impetuous growth induced by the nitrate of soda, in the present case the nitrate gives that vigour of growth which the soil freely charged with salt so much needed.

There are other duties which salt has to discharge in the soil which we cannot here notice, but enough has probably been said to explain much of the uncertainty which is supposed to attend its employment as a manure. Under judicious use it is a valuable fertilizer, and it is probable that if its price were ten times as great as it now is we should deem it worthy of more thorough attention than it now receives. The farmer, we know, needs no such stimulus as this. Show him how it is most economically used, and he will gladly adopt it, but so long as he is in comparative ignorance of what he is dealing with in the manures he is using upon his land, so long is it simply impossible for him to come to any correct conclusions as to their relative value.

In a series of articles we have drawn attention to the principles necessarily involved in the composition of artificial manures, and whilst avoiding on the one hand any interference with private interests, we have shown on the other hand that much has to be done before the production of these manures arrives at a

satisfactory position. There is no doubt that most important interests are involved in this manufacture. As a trade, the production of artificial manures has attained a magnitude of which few can form any adequate conception. It is also increasing year by year, and will doubtless assume even greater importance as time rolls on. No stronger reason could possibly be advanced to show the necessity for a fuller consideration of the laws which regulate the economical increase of the fertility of soils, and the removal of those causes of barrenness which are so much on the increase.

In this improvement we are satisfied that the manufacturers of artificial manures will gladly co-operate with their customers. As men guided by sound commercial views, they must feel that the more perfectly they promote the interests of those who deal with them, the better will be the support they will continue to receive. It never pays any one in the long run to sell an unprofitable article, and so generally is this feeling entertained in the trade, that we are satisfied that in the much desired improvement of artificial manures, the hearty co-operation of the trade may be relied upon.

The interests of the farmer are such that he is certain to be a warm supporter of any improvement which will enable him to promote the fertility of the soil at less expense, and with more satisfactory results. The outlay which is made every year for purchased manure is a very heavy charge upon the occupier. It is, however, an unavoidable outlay, unless we fall back into a slower system of farming, but with the present charges upon the land this cannot be done. What is really wanted is such assistance as without increasing the present outlay shall give better results, and allow a wider margin for what is known in commercial circles as profit. Amongst the agricultural classes profits are more frequently talked about than realized, and therefore any improvement calculated to act in this direction will be welcomed.

It appears that neither the makers nor the consumers are in a position to carry out this work alone, but much may be done by a cordial co-operation. As we have previously remarked, one of the first steps towards obtaining anything like sound experience, is to give farmers the opportunity of dealing with manures of a known composition. It may at first appear as if this involved an exposure of trade secrets, but this is by no means a necessary consequence, and even if it were so, we question if it would be a sound policy thus to impede progressive improvements.

One manufacturer may arrive at a certain result by a more economical process than another, but when the result has been arrived at there can be no objection to state what is the strength of the product offered for sale. It would intrude upon the secrets of his trade to inquire how he has arrived at this result, but this is not suggested. The manure sold should be of known composition—say so much ammonia, nitrate, soluble phosphate, insoluble phosphate in an available form, alkaline matter, and salt: then the buyer will be dealing with something tangible and definite, and he will soon appreciate the advantages of this knowledge.

The next step will follow with great ease, for he will soon require facilities for increasing those constituents he needs most, and economising his outlay by not purchasing what he does not require. The consumer will form his own opinion upon the relative influences of the materials he is using, and it will be for the manufacturer to meet that variable demand as it arises. It is as inconsistent to believe that one kind of manure or one definite mixture of manures is to be an economical mode for restoring the fertility of various classes of soil, as to consider that one kind of medicine is to cure all kinds of diseases. We may with great safety predict that when the farmer knows

what materials he is using he will soon detect his friends, and lay out his money in this direction.

The improvements which would thus be introduced into the manufacture of manures would be great, but it cannot be disguised that this progress would be very much expedited if the farmer received the assistance of scientific research to guide him in his field experiments. It has been shown repeatedly in our remarks upon this subject, that there are many intricate and important details yet to be elucidated. It is not too much to say that these will only be brought to yield the greatest practical benefit by the combination of labour which we have pointed out. There ought to be no difficulty in arranging for such a work; let us hope that those who have the opportunity of promoting this important work will do so with energy, perseverance, and skill.

It would have extended these articles to too great a length if we had treated of all the subjects connected with the composition of artificial manures in the manner which they merit. Already we feel that they have extended to an unusual length, but we are fully sensible of the importance of the subject, and of the improvements which are necessary. One point appears to become very evident by this inquiry, and that is, the great importance which will be attached in future improvements to many fertilisers which at the present time are looked upon with comparative indifference. We have got hold of a great truth, "ammonia for corn and phosphate for roots," and we are running it to such an extent that we quite overlook the fact that there are other fertilising elements which may be equally important. We know that a dozen or more ingredients are required for successful growth, and we also know that the limit of fertility is determined by that essential of growth which is least abundant. Surely this is a sufficient reason for extending our observation more thoroughly into details, and for looking upon the entire question in all its magnitude. If we say that in the purchase of artificial manures between five and six millions are expended annually, we are quite within the bounds of fact. This money is paid by a class of men who have no option but to make the outlay, and who carry on their business with a margin of profit upon their capital smaller than is realized in any other industrial occupation. Add to this the further fact that by far the greater portion of this outlay is made for the purchase of materials respecting which we have but a very imperfect knowledge, and it must be evident that the improvement of our artificial manures is a matter of the most vital importance to agriculture, and that is worthy of far greater attention than it has hitherto received.

THE BIRMINGHAM SHORTHORN SHOW.—A second "Exhibition" in Bingley Hall has been arranged for next Spring, under the same impolitic conditions of every animal entered being put up at 20 gu. as the only reserve price, "one of the main objects of this exhibition being to afford an opportunity to intending purchasers to improve their stock at a time when they are best enabled to form a correct opinion of the value of the respective strains of blood exhibited. If at any time during the year 1870 any animal disposed of at the auction shall be known to be upon the premises of the original owner, or shall be exhibited at any show in his name, the Council shall have the power if they think fit to exclude the stock of such person from competition at any future Shorthorn show." And "the Council rely on the honour of Shorthorn breeders to carry out these regulations in their entirety." No doubt the regulations will be carried out as "entirely" as they were last year, when the chief winners were all bought in at figures long above the 20 gu. limit.

ON THE CLAY FORMATIONS OF ENGLAND.

At the last meeting of the Hungerford Farmers' Club, Mr. J. A. Williams in the chair, Mr. H. TAUMPER read the following paper: Following out a similar arrangement to that adopted in my previous paper on the "Limestone Formations," I shall first give you a slight sketch of the principal beds of clay that occur in the fossiliferous strata, of which the crust of our globe is principally composed, together with their geographical distribution in this country; and, secondly, I shall endeavour to point out their importance to agriculturists. In my former paper, I told you that these fossiliferous strata were divided into three great classes—viz., primary, secondary, and tertiary; and of these three, the primary was the most ancient, and the tertiary the most modern. Commencing therefore with the tertiary or most modern, the first clay formation of any extent that we meet with is the London clay. This clay is found immediately beneath the gravel, which generally constitutes the subsoil of the metropolis; it is of great extent, and varies from 300 to 600 feet in thickness. It produces a dark, tough soil, with occasional intermixtures of sands and variegated clays. It contains numerous layers of nodules of hard argillaceous or clayey limestone, traversed by veins of calcareous spar, that radiate from the centre to the circumference, and these nodules are used in large quantities for cement. These concretions or nodules are called septaria, from the appearance of septa or partitions which this character confers, and these septaria generally lie in horizontal lines at unequal distances from each other. It is largely developed in the counties of Essex, Middlesex, and Hants; and also occurs in parts of Herts, Bucks, and Berks; at Bognor and Bracklesham in Sussex, and at the Isle of Sheppey in Kent. At the last named locality especially, large quantities of fossil fruits of the palm tribe, such as are now found in the Molucca and Philippine islands, together with the bones of crocodiles, turtles, and other animals of a tropical character, occur. These fossil fruits might have been drifted into the London basin by currents such as the Gulf stream, which at the present time deposits similar fruits on the west coast of Ireland, which are doubtless brought from the West Indies; but the bones of crocodiles, turtles, &c., seem to imply a very warm, if not a tropical climate, in these parts, at the time the London clay was deposited; and the marine shells found in it, confirm the inference derivable from the plants and reptiles of a high temperature. Beneath the London clay, and immediately above the chalk, we meet with beds of sand, mottled clays, and rolled flint pebbles derived from the chalk, and this formation is called the plastic clay, because its clay is used in some parts, as near Poole in Dorsetshire, for pottery; in fact, the great Staffordshire potteries are supplied with plastic clay from this locality. The principal places where it is developed are Newhaven, in Sussex; Reading, in Berks; and Woolwich, in Kent; but it is largely developed in this neighbourhood, and must therefore be familiar to you all. We next come to the secondary or middle class, and the first clay formation that we meet with is the Weald clay. This clay forms the uppermost bed of the Wealden formation of Surrey, Sussex, and Kent, which occurs immediately beneath the cretaceous or chalk formation. It is of freshwater or fluviatile origin, for in it there is an entire absence of marine fossils, so characteristic of the cretaceous rocks above, as well as of the oolitic strata below; while it contains large numbers of fluviatile shells, together with the bones of terrestrial reptiles, and the trunks and leaves of land plants. It was evidently deposited at the mouth of a great river, like the deltas of the Nile, Ganges, Mississippi, &c. This formation contains the fossil remains of a large herbivorous reptile, called the Iguanodon, because it somewhat resembles the iguanas which now frequent the tropical woods of America and the West Indies; and from these fossil remains the probable length of these saurians is estimated at between 30 and 40 feet. The fossils of the Weald, like those of the London clay, seem to imply a much warmer climate than that now enjoyed in England. Beneath the Wealden we come to the oolitic group, in the upper division of which, below the Portland oolite and sand, we come to the Kimmeridge clay.

This argillaceous deposit consists of a dark bluish and grey clay, which in some places passes into a bituminous shale. It is 300 feet in thickness in some parts, but thins out to a very inconsiderable layer in others, while in the northern counties of England it is altogether wanting. Its name is derived from Kimmeridge, in Dorsetshire, where some of the layers are sufficiently combustible to be used as fuel. It is largely developed in the Isle of Portland, around Hartwell in the vale of Aylesbury (where it abounds in organic remains of great beauty), near Oxford, and in some parts of Wiltshire, where it resembles peat. This clay forms the valley in which the Swindon station and the new town are situated. The middle oolite consists of the limestone called "coral rag" (which was described in my last paper), and the Oxford clay, so called because it is largely developed in the county of that name. It also occurs in some parts of Wiltshire, in the neighbourhood of Chippenham, and occupies the whole of the wide valley around Cricklade. Some very beautiful fossils are found in it in some places, as at Christian Melford, &c., and it is sometimes not less than 500 feet in thickness. The lower division of the oolitic group contains clays and sandstones, called the "cornbrash," passing downwards into an argillaceous limestone called "forest marble." In some places, as at Bradford in Wilts, this limestone is replaced by a mass of clay 60 feet thick, which is called the Bradford clay. There are also beds of fuller's earth near Bath. This lower oolite extends from Yorkshire in the north-east to Dorsetshire in the south-west, and it is largely developed in the counties of Gloucester, Oxford, and Northampton; but it consists principally of limestone formations, which I described in my last paper, and it is only here and there that it contains any clays which are of any extent. Beneath the oolite we have a formation of argillaceous limestone, marl, and clay, called the lias, which some geologists class as part of the oolitic group. In some places, as near Bath, they pass indeed into each other; but the lias can be traced throughout a great part of Europe as a separate and independent group, varying from 500 to 1,000 feet in thickness. It is largely developed in the counties of Dorset, Somerset, Gloucester, Northampton, Warwick, and York; in fact, it extends along the western escarpment of the oolite, from Whithy in Yorkshire to Lyme Regis in Dorsetshire. This formation, like that of the London clay, contains septaria, which are largely used for cement; it also contains the fossil remains of large marine reptiles, for which it is celebrated. These have been termed ichthyosauri and plesiosaurs, and their remains have been found principally in the cliffs at Lyme, Watchett, Westbury, and Whithy. Next to the lias we have beds of sandstones, clays, and shales, containing gypsum and immense beds of rock-salt. This formation is called the "trias": it extends nearly parallel with the western boundary of the lias from the river Tees on the Yorkshire coast, to the Dorsetshire and Devonshire coasts near Lyme Regis, Sidmouth, and Torbay. But the district of which the trias forms the subsoil, is variable in breadth, from the great extension of its western limits. It is largely developed in Worcestershire, Warwickshire, Cheshire, Lancashire, &c. It is the grand repository of rock-salt, produces some of the most fertile pasture lands in the kingdom, and terminates the secondary class of fossiliferous strata. The primary, or most ancient class consists principally of limestones, sandstones, and shales; and as it contains no clay formations, will not come under my notice in the present paper. Having briefly pointed out the geographical distribution of the clay formations of England, I shall now endeavour to treat of their importance to agriculturists; but before doing so, I think it would be advisable to say a few words on the composition and general properties of clay. Clay is a plastic earth consisting of about one-third of alumina to two-thirds of silica, or sand; that is to say, it is really a silicate of alumina. It is derived for the most part from the decomposition of felspathic rocks, which are generally rendered impure by the admixture of oxide of iron, lime, magnesia, &c. It owes its plasticity to the alumina, and ceases to be called clay when the proportion of silica or sand is too great for plasticity.

When iron is present the clay burns red. Tolerably pure clays, though infusible in the furnace, become readily so by the admixture of lime, iron, manganese, &c.: they are very absorbent of water in their dry state, and adhere strongly to the tongue. Ochrey, impure clays, emit a disagreeable earthy smell when breathed upon, and when they contain a sufficient proportion of carbonate of lime to effervesce with acids, they are termed "marls." Potters' clay and pipe clay are pure plastic clays, free from iron, and consequently burning white. Porcelain clay is derived from the decomposition of felspar: it occurs in Cornwall. The London clay I have before said produces a dark tough soil, and where it is properly drained and cultivated, is very good pasture land; it is also good wheat and bean land; and in those districts where it contains an additional admixture of sand, so as to give it loamy character, as in some parts of Middlesex, Essex, &c., it will grow almost anything. The plastic clay is not generally so tractable as the London clay; in many districts it is of a cold, sour nature; but this might be materially altered by means of efficient drainage and chalking or liming. The weald clay, like the plastic, is naturally a very unkind, cold soil, but where it is properly drained and limed, it produces some very good land. A great proportion of the hop plantations of Sussex and Kent belong to this formation; and there are thousands of acres of it in those counties which at the present time are comparatively useless, but which might be rendered very productive if the above-named means were only made available. I have often thought how disappointed foreigners must be who—having heard so much of British agriculture—on coming to England travel by the South Eastern Railway from Folkestone to London; for, on a great part of their journey, they pass through some of the worst-cultivated land in this country, although there are some very highly-cultivated districts in the vicinity. On the Kimmeridge and Oxford clays we have some of the most fertile vales in the kingdom, both as pasture and corn-growing lands. The celebrated vales of Bucks, Berks, Oxford, and Wilts, derive their fertility principally from these clays; but many of these tracts might be very materially improved by efficient draining. It is a painful fact, however, that in many instances, where "God does most, man does least." I have before mentioned that the sandstones, marls, and clays of the triassic group produce some of the most fertile pasture lands in the kingdom. I hope a discussion will ensue from these brief remarks as to the best means of cultivating our clay lands; but it seems to me that the first thing to be done is to get rid of the superfluous water. The second thing, in most instances, is to add chalk or lime; because, as I before told you in my paper on the limestones, it corrects sourness and augments the decomposition of vegetable matter; but without the land is previously drained lime cannot percolate through the soil and perform its proper functions. I also think that it on these clay lands that we shall more particularly find the benefits derivable from steam cultivation. All soils have the power, more or less, of absorbing ammonia from the atmosphere, but clay and peat soils possess this property in a much greater degree than any others; and, therefore, the more porous you can render them—so as to let the air get thoroughly into them—the better; and in proof of this I have seen wonderful effects produced on some of the clay lands of Essex merely by burning a portion of the soil in heaps, spreading it over the fields, and then ploughing it in. This sort of rubble can only act mechanically by rendering the soil more porous and consequently more accessible to the fertilizing effects of the atmosphere. In conclusion, I will only add, that if the large landed proprietors of this kingdom were only to grant their tenants good long leases, and share with them the expense of draining the wet clays, thousands of acres of land might be reclaimed, which at the present time are almost useless; and they would thus not only improve their estates, as well as their own and their tenant's pockets, but they would confer a great and lasting benefit on the country at large.

(Mr. Trumper exhibited a series of fossils from the clay as illustrative of his paper.)

Mr. LANE said the clays of England formed an important tract of land, and in an agricultural point of view possessed more value than was derived from them, containing more potash than any other formation, and potash as was well known was a highly valuable ingredient. The great thing was to get rid of the superfluous water, by draining or chalking, and to allow the air to permeate the soil. One advantage clay pos-

sessed was that it was more difficult to exhaust than any other soil when well cultivated. They might crop and crop as long as they pleased, if it was done in good weather; but it was a very different thing in light porous soils, in which the soluble matter was very likely to be washed out. In some districts a great deal was done by mixing soils, which he (Mr. Lane) strongly advocated.

Mr. KIMBER agreed with the system of "lifting" the land, but did not approve of steam cultivation. He would "lift" it with horses, 5 or 6 inches deep. He thought, if he had a farm for five years only, it would pay him to chalk it the first year. He did not agree with Mr. Trumper if he approved of burning couch and ploughing it in.

Mr. LAWRENCE thought chalking a great benefit to stiff clays, but clays with a chalk subsoil did not require draining. Chalking, however, had wonderfully benefited his crops, and destroyed injurious weeds. A great deal of clay land in that neighbourhood should be drained; some of his land had been drained by a Government loan, and he paid a certain interest on it, the amount being chargeable on the land. His landlord had effected former drainage.

Mr. KIMBER said in the Woodlands they had nowhere to drain it to. (A voice: Drain it into Lamborne.)

The CHAIRMAN said the cultivation of clay land some years ago was a very expensive process, and was therefore greatly shunned. The land by the constant treading of three horses at length in the furrow, when ploughed, was completely puddled. Clays could be drained in a hilly country, as he could prove by an example on his own farm. He had a field called Middle Pond, he supposed because there was a pond in the middle, being the lowest part of the field. He dug a pit for chalk, and before it fell in put a fire pole down, and cut a drain from the pond into the pit. The pond disappeared, and there had been no water there since. He greatly advocated steam cultivation, because it remedied the effect of centuries of treading, and loosened the ground, thus admitting the sunshine and the air. The chairman concluded by mixing common vinegar and chalk, as an experiment proving the effect of carbonate of lime on acid.

Mr. TRUMPER much agreed with Mr. Lane as to the desirability of mixing soils, and the expense would be, he thought, comparatively nothing, for they had men and horses standing about many frosty days when they might be employed carting chalk on to clay or clay on to chalk. But the tenant farmer had very little encouragement to improve his land under the present system of yearly tenancies with six months' notice to quit. If he improved his land, more rent was put upon it. The arguments which were brought forward for the improvement of the land system in Ireland applied equally as forcible in England. He approved of steam cultivation because it did not turn up the rank soil at the bottom which it would take years of exposure to fertilize, but loosened the ground 10 or 12 inches deep, and exposed it to the action of the atmosphere. Mr. Kimber had misunderstood him as to burning couch; he did not approve of it, but thought there was no greater mistake than to burn couch for the ashes; they might let it rot, but many valuable properties were lost by burning. He advocated that the rough clods of a clay field should be stubbed up and burnt into a sort of brick rubble, and carted on the land. It rendered the land more porous and more accessible to the atmosphere. Chalk was better for clay than caustic lime, as lime had to be re-converted into carbonate of lime by exposure before it was of any use, the only advantage was that lime was doubly as portable. Hard limestone rock would never act at all till it was burnt, and then, when re-converted into carbonate of lime by the atmosphere, it became friable and fit to act readily on the soil. Having argued in favour of Government loans, Mr. Trumper said, though the Chairman's experiment was perfectly correct, when they described clay as sour land, it was not because it actually contained acid, but protoxide of iron, a substance poisonous to vegetable life, which decomposition converted into peroxide of iron.

The meeting concluded with votes of thanks to the Chairman and Mr. Trumper.

THE ROYAL AGRICULTURAL SOCIETY OF IRELAND.—At a Meeting of the Council it was resolved to hold the Show in 1870 at Ballinasloe, and not in Dublin, as previously agreed to.

ON SEEDS AND GRASS LANDS.

At a meeting of the Kendal Farmers' Club, Mr. KEY, of Casterton, read the following paper on Grass Seeds and Permanent Pasture: In introducing the subject I shall merely give you an outline of my own practice, based upon thirty-three years' experience. However people might differ in the last generation as to the most remunerative modes of farming, a great majority of the practical farmers of the present day will agree with me when I say that were one-half of the arable land in this county properly laid down for permanent pasture it would yield a more profitable return to the occupier. When I say this I wish it to be perfectly understood that I do not include moss land, knowing that it is more suitable for ploughing than for grazing. But how often do we hear farmers say, "I am obliged to plough my land, it won't graze!" Whenever I hear of land that won't graze I attribute the failing to the management of it more than to any inherent disqualification in the soil itself. I go every three months into a part of Yorkshire where nothing but the plough is believed in, and where they would plough up every acre of grass land upon their farms if allowed to do so, and even there I have still found some isolated verdant pastures standing out, as it were, in bold relief, each like an oasis in the desert, and these solitary instances are generally good specimens of rich permanent pasture. Yet the people still persist in telling you that their land won't graze, in spite of the ocular demonstration they have to the contrary in the samples before them, which are subject to the same atmospheric and geological laws as their ploughed land. One common cause of failure in sowing down land to pasture is an improper selection of seeds. Many farmers never think of sowing more than two or three different varieties. A bushel of rye-grass and from 7 lbs. to 10 lbs. of clover used to be, and perhaps still is with many, the general allowance per acre; yet if you will go into an old pasture and take out a sod twelve inches in diameter, you may probably find from eight to sixteen different plants in that small area. Hence, if we take the trouble to sow the seeds of all these different varieties at once, we may naturally expect an earlier formation of thickly-matted park-like sward than if we left that operation for time and the elements to accomplish. Before sowing our seeds it would be as well to examine some old pasture in the neighbourhood, and endeavour to select those grass seeds which seem indigenous to the soil. I will give you a collection which I have used for the last thirty years and upwards with great success generally, and which I hereby denominate the "Quantity of seeds per statute acre for permanent grass:" 6lb. of Italian rye-grass, 6lbs. perennial rye-grass, 3lbs. cocksfoot, 2lbs. timothy, 3lbs. meadow fescue, 1lb. varied-leaved fescue, 1lb. hard fescue, 2lbs. rough-stalked meadow grass, 2lbs. meadow foxtail, 1lb. of crested dog-tail, 1lb. sweet-scented vernal, 3lbs. alsike clover, 2lbs. white clover, 6lbs. cow grass; total, 88½lbs. Some of you may take exception to the small proportion of perennial rye-grass allowed in the mixture, it being a grass so universally sown in large quantities. I grant that it is a most useful plant for a hay crop; but pastures abounding with it are never eaten level, and cattle will not take it so long as there is any other to bite at, and, were it not essential for a thick sward, I would leave it out of the mixture entirely. Italian rye-grass is not permanently useful, inasmuch as it is only a biennial plant; but, as it is a quick grower and a heavy cropper for the first year, it affords shelter to the tender grasses, and fills up the ground until the more tardy growers come to maturity. In the above-named collection you will observe that there are fourteen different varieties, and the cost per acre will be about 24s., more or less. Those who consider this too expensive a dose, I would recommend to ponder the trite axiom, "whatever is worth doing at all is worth doing well." In addition to the two aforesaid reasons for not using Italian or perennial rye-grass to any great extent, I have also another great reason which I shall hereafter explain. Most of you are aware that when a farmer has to go into the market to buy seed-wheat, he is very careful to purchase a sample which is free from darnel, smut, and all other weeds to which a wheat crop is

liable, or in like manner in the selection of any other seed-grain. But when you or I go to purchase our Italian or perennial rye-grass seeds, we cannot detect the difference betwixt what is generally called twitch-grass and either of the aforesaid varieties, and I am sorry to say in too many cases twitch-seed often accompanies those varieties. I say this with the greatest deference to all seed-growers and seed-sellers; I am making no personal observations, neither could I attempt to do so, but I know it from painful experience to be a fact, and to illustrate the aforesaid fact, I once laid down a field of 9a. 2r. 2p. with nearly the aforesaid mixture of seeds for permanent pasture, the only difference being that I used 9lbs. of Italian, and 9lbs. of perennial, being 18lbs. more of each sort to an acre than in the aforesaid mixture. The seeds were sown along with oats after a turnip crop, one-half of the turnips having been consumed on the land by sheep; the land was perfectly clean, and the seeds well tilled with farmyard manure during the following winter after the reaping of the corn crop, and mown once the following summer. After this treatment and great outlay, I very naturally anticipated having a good permanent pasture for years to come; but I regret to say that, after laying two years, twitch-grass made its appearance to a great extent, and was evidently supplanting all other grasses; the consequence was, I was obliged to plough it up again, and a field fuller of twitch-grass I never yet saw; and, after going through a course of thorough cleaning, I ventured to sow it down again with the aforesaid mixture of seeds along with rape, after a corn crop, for permanent pasture, and it is now in pasture, after lying five years, and doing well. It has been twice top-dressed during those five years, once with farmyard manure, and once with 2 cwt. of guano and 2 cwt. of salt to each acre. I could give other instances, if necessary, of a similar kind, on land under the four or five course system of husbandry, which, to my knowledge, was perfectly clean when laid down, but is at present something similar to what mine was after being so unfortunate with the seeds in my first attempt to lay it down. The case, in addition to my own, which I refer to, is about 4 miles from this town, on the high road side leading to Kirby Lonsdale. Most of you here present know how expensive the cultivation of a turnip crop is when land is in such a state as this is in which I have last alluded to; consequently it is most important for us all to know where the Italian or perennial rye-grass seeds were grown which we purchase, being sure to get them off land which is clean and free from twitch-grass, and that they are the seeds from the second crop of hay, which is not so liable to have twitch or other noxious weeds among them as those from the first crop. Some of you may probably say that we may as easily get adulterated small seeds mentioned in the aforesaid mixture as well as the aforesaid grasses: to this I would say that we can detect adulteration in small seeds by merely damping the end of one of our fingers and placing it in the seed bag, in this manner you then can perceive every seed in its own body, and can then judge by the naked eye all the deficiencies amongst those seeds, and we may further pretty nearly ascertain whether they are old or new seeds by bruising them; you will then see whether they are full of juice or not—if not full of juice, you may then suspect that they are old seeds and not so likely to germinate as quickly as those which are full of juice. Another common cause of failure is the want of top dressing after the young grasses have in some measure exhausted themselves. If a field is well seeded, clean, and full of heart, it will graze well for a few years, and then it begins to fall off for want of stimulant. At this stage the general cry is, "Oh, it is done! I knew it would not graze more than three or four years!" And then it is again ploughed up. Now, suppose we had been ploughing this field for corn crops, we would have applied a dressing of manure to every alternate crop at the very least; yet, we imagine it ought to graze from year to year without any top-dressing whatever, forgetful that the milk, beef, mutton, wool, and other produce which has been sold off that field must have

exhausted the soil, and rendered it poor in consequence. The question of sowing-down with or without a white crop, should, in a great measure, be regulated by the domestic economy of the farm. When properly managed, I have no objection to sow-down with a white crop; we can then better afford to give the seeds a top-dressing after the corn crop comes off. The kind of white crop to sow for this purpose has hitherto been a moot question with practical men. Some advocate oats, others barley; but I should prefer the latter, not sowing the barley too rank with seed—say 75 qts. to an acre. By doing this the barley is not so apt to break down and smother the young seeds. I should harrow the barley well in, and make the surface as even as possible for the sowing of the grass seeds, which I would harrow-in with a light harrow and then roll, thus retaining the moisture and getting the seed embedded safely in a fine fresh soil, secure from the dangers incident to this variable climate—taking great care to have all these things done when the land is dry and in good order. If sown with a white crop, great care should be taken in cutting the grain not to cut it too low, so as to injure the young grasses. It has been a common custom of late years in some localities, to sow down with rape and seeds without a corn crop for permanent pasture, and consume the rape on the land by sheep. If intended for permanent pasture, I should prefer sowing a little rye along with the aforesaid mixture of seeds in preference to rape, inasmuch as the roots of the rape plant are so long and fibrous that they take great hold of the land, and a little rye will afford sufficient shelter for the young plants and enable them to develop themselves more evenly and form a better surface, which is indispensable. If this course was pursued, I should prefer not sowing the seed and rye until the latter end of July, thus evading all annual weeds as much as possible, to which the land is liable, which are apt to take the lead and choke the young seeds. Neither would I have them too much eaten by sheep, or any other kind of stock, the first winter. I would also roll the land two or three times at different intervals during the winter and spring, when the land

is in order, with a heavy roller, so as to compress the land and keep the seeds as much as possible from being thrown out by frosty nights and sunny days, which are very apt to do so. Great care should be taken in sowing the seeds evenly so that not an inch of ground be missed, otherwise the unsowed portion will disfigure the pasture for years to come, notwithstanding any after-seeding we may apply. I would then let the seeds remain unmolested until they flower and seed, but not until they ripen. I have an idea that grasses, like many other plants, feed as much from the atmosphere as from the earth; and if we take away the leaf before it arrives at a certain stage of development, we deprive the plant of one of the chief sources from which it derives its nourishment, and a weakened and stunted growth is the result. Hence, I should prefer mowing the first year in preference to grazing with sheep, as they eat so close that they are apt to injure the roots of the plants before they get perfectly established; then, I should give the land a good top-dressing with farmyard manure, and, after that, I would give it a hand tillage, consisting of two cwt. of Peruvian guano and two cwt. of salt, mixed together, to each statute acre, every three years—the salt acts as a deodorizer, and fixes the ammonia of the guano. This course pursued, I feel confident that it would soon repay the farmer, and enable him to have a good park-like sward on his pasture for many years. I have hitherto spoken of seeds for permanent pasture only; but were I sowing down for alternate husbandry under the five-course system, for that purpose I would use a somewhat different and less expensive mixture, the following list will form an ample seeding for one statute acre, namely, 6 lbs. of Italian rye-grass, 6 lbs. perennial rye-grass, 2 lbs. of cocks-foot, 2 lbs. timothy, 3 lbs. alsike clover, 2 lbs. red clover, 2 lbs. white clover, 2 lbs. cow-grass, 1 lb. sheeps-paralely; total, 26 lbs. I may also state, that any land sown down for permanent pasture or alternate husbandry should be in rich condition and full of tillage before the seeds are sown; this is also indispensable to procure a good permanent pasture or even a pasture for alternate husbandry

ABINGDON FAT CATTLE SHOW.

The annual show was held on November 22. Owing to the foot-and-mouth disease and other circumstances, the entries were not numerous. Mr. H. Betteridge exhibited a Hereford Ox, and Col. Loyd-Lindsay a Shorthorn cow, both of which gained first prizes and silver cups. In the sheep-classes, Mr. S. Drace, Mr. G. Wallis, and Col. Loyd-Lindsay were successful exhibitors; while Mr. R. Aldworth carried off Col. Loyd-Lindsay's cup for the best pig in the yard; and Mr. J. Beezley gained a prize for a hunter. In the root department there was more competition than in the other classes; but Col. Loyd-Lindsay took the lion's share of the prizes.

JUDGES:

Cattle.—Franklin, Ascott, Wallingford; A. Edmunds, Longworth; and B. Castle, Charlton, Wantage.
Horses.—T. Theobald, C. P. Duffield, and J. S. Bowles.
Roots.—J. Litchfield, Kingston; T. N. Dewe, Drayton; and R. Pyke, Lyford.
Carn.—J. Weaving, Oxford; and C. Cox, Abingdon.

CATTLE.

First prize of £5 for the best fat ox, H. Betteridge, Haney; second, Col. Loyd-Lindsay, Lockinge Park.

First prize of £5 for the best steer under 8 years and 3 months old, H. Betteridge; second, Col. Loyd-Lindsay.

Prize of £5 for the best fat cow, Col. Loyd-Lindsay.

First prize of £5 for the best two heifers in calf, under 3 years of age, W. Curtis, Fernham; second, W. Curtis.

Prize of £5 5s. for the best beast shown in Class 1 or 2, H. Betteridge.

Prize of £5 5s. for the best beast shown in Class 3 or 4, Col. Loyd-Lindsay.

Prize of £5 5s. for the best two heifers in Class 5, W. Curtis.

SHEEP.

First prize of £3 for the best pen of three fat half-bred wether sheep under 23 months old, S. Drace, Eynaham; second, Col. Loyd-Lindsay.

First prize of £3 for the best pen of three fat short-woolled wether sheep under 23 months old, Sir W. Throckmorton, Buckland; second, Col. Loyd-Lindsay.

First prize of £3 for the best pen of three fat ewes, G. Wallis, Shifford; second, G. Wallis.

Prize of £5 5s. for the best pen of sheep in any class, Sir W. Throckmorton.

PIGS.

First prize of £3 for the best pen of three fat pigs of one litter under nine months old, W. Graham, Wootton; second, G. B. Morland, Abingdon.

First prize of £3 for the best fat pig under 14 months old, R. Aldworth, Hagburn; second, Col. Loyd-Lindsay.

A silver cup for the best pig in the show, R. Aldworth.

HORSES.

Prize of £10 10s. for the best four years old hunter, J. Beezley.

Prize of £5 5s. for the best cart colt under three years old, J. Phillips, Ardington.

ROOTS.

First prize of £3 for the best 25 untrimmed roots of Swedish turnips, grown on a piece not less than five acres, Col. Loyd-Lindsay; second, W. Graham.

First prize of £3 for the best 25 untrimmed root of mangold wurzel, grown on a piece of not less than two acres, Col. Loyd-Lindsay; second, W. M. Tagg, Goosey.

First prize of £3 for the best collection of roots, not less than 10 each, field culture, not less than four sorts, Col. Loyd-Lindsay; second, R. Aldworth.

CORN.

First prize of £3, for the best five quarters of wheat, one bushel in unmarked bag to be pitched, T. Latham, Little Wittenham; second, Col. Loyd-Lindsay.

First prize of £3, for the best five quarters of barley, one bushel to be pitched, R. Aldworth; second, W. Graham.

Best 19 roots of mangold wurzel, R. Aldworth.

Best 19 roots of long ditto, W. M. Tagg.

Best 12 roots of swedes, R. H. Betteridge.

Best 12 roots of turnips, R. Aldworth.

A dinner followed, over which Colonel Loyd-Lindsay, M.P., presided, Mr. W. Aldworth being vice-chairman.

THE BIRMINGHAM AND MIDLAND COUNTIES CATTLE SHOW.

At the first blush, the foot-and-mouth disease should have much to answer for, as its effects may be tested by so short a show in the Midlands. The entries, however, were not only numerically small, but individually moderate. Many of our most famous exhibitors made no sign, as Mr. M'Combie, for one, did not sent a beast; while something like accident prevented any appearance from other well-known homesteads, either here or further on. Mr. Lynn's prize heifer, Aurora, was ill at home with a surfeit; Mr. Foljambe's Cherry Blossom, who was getting as ripe as a cherry, died very suddenly a few days since; and a Devon steer, of Mr. Smith's, was set fire to in his box on the way up from Exeter, and never came before the judges. Then, Mr. Stratton kept anything he might have in this way at home at Chippenham, or back for London; and hence it happened that nothing so very extraordinary was to be encountered even in the Shorthorn classes. Taking them right through, the Herefords have seldom offered so poor a front; nor were the Scotch cattle by any means equal to their pristine form. Of Devons, on the contrary, there was by comparison a large and good show, backed by one or two clever Crosses; but we doubt much if there were really a GOLD-MEDAL animal in Bingley Hall. In fact, the beasts were so evenly indifferent, that another set of judges might reasonably enough reverse many of the decisions; and we certainly do not expect to see the Birmingham lead very strictly followed in London.

Beginning at the beginning, Mr. Heath again had the best of all the Herefords in a four-year-old ox, but this is only half a good one; being very handsome forward, with a fine head and kindly look, as well as a great broad back. But he is spoiled by his terribly mean drooping quarter, and is a very ungainly animal when brought out. The second best Hereford ox is as plain a beast as ever was exhibited, with little but his size and touch in his favour; and we altogether prefer the third prize, the best of all on Monday at Abingdon, where he was shown by Mr. Bettridge, although bred by Mr. Evans, of Swanstone. This is a pretty straight stylish ox, of fine quality, if rather out-sized, the more especially when standing side by side with Mr. Ridgley's six-year-old monster, who fairly towered over everything in the class. This included a very middling specimen from Chadnor Court, and although in it and the younger class there were such names as those of Mr. Pike, Mr. Price, and Mr. Pitt to be seen there was not a really crack Hereford steer in the whole line of them. The two cows sent were so bad that the judges, and even then on something like compulsion, would only award the second and third prizes, utterly refusing to honour anything with a first. On the other hand, Mr. Garrett's best heifer was a very taking one, and to our thinking the best of all the Herefords; being neat, round, and deep, with a nice head and good character, as a long way the first of her class, which was otherwise moderate enough. The Hampton Violet is a podgy creature, with no very visible shoulder, at least where it should be, and standing very in behind; while her Majesty could only have taken the third prize as the best of a very bad remainder. In four classes there were twenty-three entries of Herefords; one prize was altogether withheld, and not a single commendation was appended to those actually awarded. This is sufficiently significant of the strength to be found in this section of the show.

The Shorthorns were in every way better; but here, again, there were no commendations, as the merit, more particularly amongst the oxen and steers, was mainly confined to the first and second of the classes. Amongst the older beasts there was nothing very particular, as not much to choose between Colonel Lindsay's steer and Mr. Rowland Wood's ox. Indeed, they have now beaten each other in turn, Mr. Sanday, at Northampton, in the summer, giving the Clapton beast a prize, and merely commending the Colonel's entry; whereas at Birmingham Mr. Sanday must have been mainly instrumental in placing the Berkshire above the Northamptonshire specimen. In the interim Mr. Wood's animal certainly seems to have gone on the better of the two, and Colonel Lindsay's was beaten at Abingdon by Mr. Bettridge's ox, the third of his class here. This makes the form very moderate; and certainly the first prize Shorthorn is anything but a good beast. He is high, plain, and patchy, with a head showing little or no Shorthorn breed about it, and as, with the exception of Mr. Wood's entry, the others were no doubt worse, this was a very poor class.

The first and second of a small entry of steers did much more for the credit of the breed, and these are, no question, both superior, if not quite first-class animals. Mr. Rowland Wood's steer we first met at Northampton in July, where we spoke of him as "a capital red beast, which his owner had picked up at Oakham last Christmas, and that for handsome looks and level feeding was surely the best of all the fat animals." Little Wonder, for he has a name of his own, went again to Oakham last week, where he not only took the first prize of his class against a very smart steer of Mr. Pulver's that will be kept on for another year, but also the Uppingham School medal and extra premium of 25 sovereigns, as the best of all the fat beasts. But the judges stood alone here, that is as to "the best of all," public opinion at Oakham going for Mr. Willis' Rose of Lucknow, the gold medal cow at Birmingham last year; now, at seven years old, said to be as level as ever, and five inches more in the girth than she was last season. Having already made her appearance in both Bingley and the Islington Halls, the old Rose will next show at York. Still, however well she may have looked at Oakham, there is no doubt but that her conqueror, Little Wonder, has gone on equally well. He is so true and straight in his outline, that the editors of *Herd Books* might point to him in some proof of the fidelity of their very amusing illustrations. He is just a trifle high in the setting on of his tail, but otherwise he is as level a beast as ever was seen; while he has plenty of style, is very deep, and for his age, at under three years, certainly a wonder in his way, if perhaps only a little one. Nevertheless, the Birmingham judges declared that they found his superior in an older steer of Lord Aylesford's; and a very showy beast this is, with more grandeur than the red, a fine quality coat, a beautiful broad back, and so on. But he is not so thoroughly true as the other; his head is badly set on, and he is not so well covered about his shoulders. However, all the Judges held to the light roan very determinedly, for they made him the best of his class, the best Shorthorn bred and fed by an exhibitor, the best of all the Shorthorns, the best of all the oxen and steers, and the best animal in the yard. At the utmost he is the best of a bad year, not that we believe he can be the 100 guineas

winner in London, even if Little Wonder should not beat him when they meet again. A white son of the white Costa was third, but in point of fact, nowhere, in comparison with the other two, and the only class ran up to four or five.

There travelled up from Newcastle-upon-Tyne a certain Princess of Yetholm, bringing with her a very high repute, which she has quite maintained in the Midlands. She is a very neat, not large cow, nicely fed, fashionable in her appearance, and kindly in her touch, so that she looked to place herself readily enough as the best Shorthorn cow. Some, indeed, went further, and, as "bred and fed" by Sir Walter Trevelyan, would have made her the best on this condition also, and so of course the best of all the Shorthorns, while this would have led on to her being not merely the best of all the females, but the best in the yard. Not but that some of her company kept her in countenance, for the Messrs. Mitchell's Blue Belle is a very sweet almost dainty creature, and what with her pretty lady-like head, her nice long low frame and light bone, would seem yet more an ornament for the herd than a victim to the shambles. She has, of course, been a frequent winner in Scotland; and with the honours still all going North, Mr. Whyte's Windsor's Lilac Flower is more like beef, being very heavy-fleshed, but lacking the style of the other two. Colonel Lindsay's Lady Elgin, the best cow at Abingdon, for the want of competition, claimed no notice here; and, although they kept a cow, as we think, of Mr. Sheldon's, out for some time, nothing came of it. In an entry of half-a-dozen the three prize heifers had all some merit. Col. Townley's Thistledown looked rather unwillingly and overdone, but she is grand either to meet or follow, with a beautiful bosom and broad back; while she has flesh put on wherever it can be, but is somewhat disfigured by a big knee. Two years since Thistledown was a first prize heifer at Aberdeen, where she was purchased for 100 gs., but Culshaw could never get her to breed. Cherry Princess 3rd, from Speke, is a prettier heifer if not so valuable as a butcher's beast; as, if we remember aright, she has been to Birmingham before, where she was bought in at the spring sale; while the Aberdeen sample well sustains the fame they enjoy in these parts for growing Christmas fare.

Well as the Devons show in London, they have for some years made no great stand in Birmingham; but there were this season two really good classes of oxen, that walked up from their stalls with something of the air of race-horses; as assuredly there is no beast shows so much blood as a Devon. Of the first and second in the old class and the first and second in the young class it was anything for choice, so evenly were they matched, and so close was the competition. The best *bred and fed* was assuredly Mr. Hambro's Delcome, a very blood-like three-year-old, all good meat to the hand, and an admirable animal when out; while Mr. Nixey's next best in this lot was very neat and taking, but not so ripe. The judges, however, pronounced the best of all the Devons to be Mr. Farthing's older steer, the second in his class at the Plymouth show last Christmas, and a beast of more breed and quality than the Somerset-Devons always reach to. Then he was firm in his flesh if not so forward as he might be, and Mr. Burton's long, straight, stylish second was almost his equal, if Mr. Hambro's were not the best of the three. But the special Devon judge appeared to have lost his head, for he hung to a great coarse animal, of little or no true Devon character, fed at Hooper's, and this he insisted on being placed third, while the two Shorthorn men were quite willing to take the responsibility of those placed higher in the list. The Stowey herd was altogether in force, for Mr. Farthing claimed the best cow in

Lady, who has fed very nicely, and the best heifer in Miss Laura, a Royal Leicester heifer, that is going all in pieces, and getting so gaudy as to be almost unsightly. Mr. Hitchcock's second prize cow, Pretty, from Mr. Tapp's herd, is a nice lengthy one, quite worthy of her place, but taken as a lot the cow classes would not compare with the oxen, and this is of course just as it should be at a fat cattle show.

There were half-a-dozen Long-horns, amongst which, noticeably enough, Mr. Chapman, of Nuneaton, made no entry; there were two or three Welsh runts; three black polled beasts; and some half-dozen moderate Highlanders. From all these the judges found nothing to dwell over, when they fined down their duties to picking out the best ox. Then the best Hereford was one of the first sent away; even the Devon man never seemed to take a second glance at Mr. Farthing's beast; and the only really formidable opponent to Lord Aylesford's steer turned up in Messrs. Martin's Aberdeen cross. This was a great square upstanding animal of more size rather than majestic appearance; far better forward than the Shorthorn, and at his age a much more valuable beast for the butcher. He was not perfect, nor on an average a gold medal ox; but he would most probably have been in such a show, had not two out of the three Judges been Shorthorn men. In 1868, the Bench was made up of one Shorthorn, one Hereford, and one Devon breeder—a much more wholesome arrangement—and we never remember to have watched awards that proved better. The two-to-one plan did not look to work near so well, the more particularly as the unit did not carry such weight even at his own special business.

With the sheep they held to a better division of duty, making up a Quorum from the Longwool, Shropshire, and Southdown fanciers. But then amongst the sheep there was very little to do. In obedience to the call for early maturity, the old classes of wethers have been removed from the list, and the entries cut down to one-half; as, indeed, we never remember this section of the show to have commanded so little interest. The Leicesters were much as they have been here, and Lord Berners was first again with his sheep, such as they are, but there was not an animal of really fine Leicester type in the entry. There were three pens of Lincolns with three prizes awarded, the first and second lots being very excellent sheep. Sir John Rolt's best Cotswolds were of good character, with the second and third prize pens anything but prize sheep; and there were four entries in all of Cotswolds. The first prize, Oxford Downs, were really good, and the other prizes should have been withheld. There were two pens of Hampshires, both apparently reverting to that hang-dog, ugly expression, for which this sort was once so famous, or infamous, and two prizes were duly awarded. Mr. Overman did not enter any cross-breeds, and so Mr. Nathaniel Stilgoe took the first prize with a Cotswold and Oxfordshire Down mixture—or a mixture of mixtures—while Mr. Zachariah Stilgoe was second, with a long and short wool cross, a much more simple way of putting it. The Oxford mixtures were very cleverly got up, but when you came to examine them, no doubt Mr. Zachariah's sheep were a deal better than Mr. Nathaniel's; although, so far as the value of the experiment went, there was not a pen of these Crosses worth any particular encouragement. The judges commended a whole class of Shropshires, and highly commended one particular pen, which was making the most of it; but then Birmingham is something of a capital for Shropshire flock masters. Lord Chesham's neat "Downy" sheep had again, however, all the best of it, though his second-prize lot were not very "sorty;" while nothing could be greater than the contrast between his Lordship's first and Mr. Nock's

third-best, placed as they were side by side. Mrs. Beach continues to preserve a sheep of very nice useful stamp; and, if people could be content to feed at Christmas time on wool rather than mutton, Lord Wenlock's Yorkshire-Shropshires might soon come into fashion. How is it that they have managed to muddle away all the promise, or something more, my Lord once enjoyed, for sheep and pigs? It may be treason to say so, but, as times go, Colonel Kingscote's Southdowns look a vast deal more like Shropshires; whereas Lord Walsingham never showed sheep of purer Southdown type than he has done this year at Birmingham. The first-prize pen were very pictures of what they should be; so admirably matched, with such nicely-shaded shapely faces, such neat symmetrical frames, and all over of such high breeding and quality. They were not large, certainly; and we were almost sorry to hear that they will go for more size in London. During the last twenty or thirty years, some alloy no doubt has been tried with the Southdown, but this is a mistake; for what we gain in weight we lose in almost every other way. The second-prize Merton pen were not equal to the first, but if there had been a cup for the best entry of any animals in the Hall, the Southdowns would have won it.

The entry of pigs barely reached to that of last year, when there was one of the smallest shows ever seen in Birmingham. Nevertheless, some of the pens were very commendable; and, in the opening class, three capital Berkshires, from Upper Winchendon, fairly beat all the whites—a not very common occurrence when they come together. Her Majesty's had more size, but were neither so neat in appearance, nor so firm in their flesh as Mr. Cartwright's pretty pigs; but, in the next lot, the Royal Windsor did better, not only being the best of their own but class, also the Cup pen as the best of all the young fat pigs. They looked, however, at first to be very closely run by another lot of Berkshires, bred by Mr. Clark at Maidenhead, and very long and handsome, but hardly made up enough for exhibition or well matched, for otherwise they would at least have been second. As it was, the judges took their time in deciding between these and the Stroxton whites which, with good ends, were very light and slack in their middles. Mr. Eden's best old pig was of superlative merit in a very good class, with Mrs. Beech showing a very pretty Dorset, and Mr. Sadler getting third with a deep but coarsish Berkshire; while Mr. Clark was again and deservedly commended for a Berkshire sow bred by Captain Stewart of Gloucester, and Mr. Bantock might have done more had his entry been better finished off. Nearly all these fat pigs were quite up to the average of excellence, and there was another good class of breeding Berkshire where the point of preference rested between the high quality of Mr. Spencer and the true useful character of Mr. Fowler. The Aylesbury are no question the most useful farmer's pigs, but they always go for a finely-bred Berkshire in Bingley Hall—a Warwickshire-Berkshire, so to speak—and although the judges were from other parts, they did not rule against the line laid down for them. The class of large breeding pigs was so generally bad, that it was only after considerable hesitation the prizes were awarded. The Messrs. Howard's pen, with their plain heads and big flap ears, were just passable, and that was all; but how a pig-fancier like Mr. Fisher could show and win with such a wretched pen as he did was a very marvel of generosity on the part of the management, and the judges were ready enough to decry their own handiwork. Of course any further prize in this class was withheld, there being a point at which a line must be drawn. The small breeding pigs, on the contrary, were, so far as the prize pens went, all very good, and from Mr. Lynn's lot downwards honestly deserving of the distinction they gained.

All things considered, the display of roots is quite as good, if not better, than might have been expected. Although the early part of the past season was extremely unfavourable to the crops generally, the copious rains of the late summer, and the open weather of the autumn, seemed to have done much to promote the growth of this description of farm produce. The result is that, notwithstanding the show of roots here is less than usual in extent, it is a full average in respect to the size and quality of the various specimens. There were half-a-dozen competitors for the Cup offered for the best collection. As will be seen on reference to the subjoined list, it was won by Sir William Heathcote, the aggregate weight of whose entry was 303 lbs., the six long mangolds weighing 101 lbs., six globe mangolds 134 lbs., and the swedes 86 lbs. The collection which came nearest to this was that of Mr. Dickinson, from the New Forest, whose long mangolds weighed 121 lbs., his globes 95 lbs., and swedes 60 lbs., making a total of 276 lbs. The swedes were remarkably uniform and symmetrical. The kohlrabi was especially good; the specimens were all of the green globe variety; the first-prize collection being very large and handsome bulbs, weighing 102 lbs. The weight of Col. North's six was 74 lbs. The prize stands of long mangolds weighed 192 lbs. and 169 lbs. respectively; globe and intermediate mangolds 119 lbs. and 98 lbs. The first-prize swedes of Mr. Moore (Bangholm) weighed 102 lbs., and those of the Duke of Portland 102 lbs. The class as a whole is very good as respects both size and weight. Of the common turnips the yellow-fleshed kinds were decidedly the best. The carrots were not plentiful, but smooth and handsome examples. The ox cabbage are meritorious, being large and good in quality. The first prize stand weighed 69 lbs., 67 lbs., and 60 lbs. respectively—total 196 lbs. The three which received second honours weighed 58 lbs., 60 lbs., and 58 lbs.—total 176 lbs. The show of potatoes is not large, which may be accounted for by the fact that several other exhibitions are being held about this time. Many good dishes, however, have been brought together, there being no vegetable which has received greater attention or in which greater improvement is manifested than the potato; the red Regents and Paterson's Victoria being well represented.

There is only a very limited display of corn, but there is not an indifferent specimen to be found. The white wheat is remarkably good. Of red there are only three lots entered, but they were considered good enough to deserve the award of both the prizes offered, which were given to good samples of the Nursery kind. The barley, oats, beans, and peas are uniformly excellent.

The Birmingham Meeting is still pre-eminent for its poultry. All the varieties are as usual very fully represented. The following are the weights of the principal prize pens of ducks, geese, and turkeys: White Aylesbury drake and one duck, first prize, 17 lbs. 12 oz.; second, 17 lbs. 7 oz.; third, 17 lbs. 2 oz.; fourth, 17 lbs. Brown drake and one duck, first prize, 16 lbs. 18 oz.; second, 17 lbs. 12 oz.; third, 17 lbs. 12 oz.; fourth, 17 lbs. 13 oz.; fifth, 16 lbs. 6 oz.; sixth, 16 lbs. 6 oz. Geese, grey and mottled, birds above a year-old, first prize, 57 lbs. 14 oz.; second, 53 lbs. 8 oz.; ditto, birds of 1869, first prize, 48 lbs. 12 oz.; second, 46 lbs. 4 oz.; Turkeys, cocks exceeding a year old, first prize, 34 lbs. 12 oz.; second, 32 lbs. 2 oz.; and a very highly commended pen, 29 lbs. 12 oz.; ditto hatched in 1869, first prize, 33 lbs. 12 oz.; second, 23 lbs. 8 oz.; highly commended, 23 lbs. 2 oz. Two turkey hens over a year old, first prize, 37 lbs. 4 oz.; second, 32 lbs. 4 oz.; highly commended, 23 lbs. 12 oz. Two turkey hens hatched in 1869, first prize, 23 lbs. 2 oz.; second, 27 lbs. 12 oz.

PRIZE LIST.

CATTLE.

JUDGES.—H. W. Keary, Bridgnorth.

William Sanday, Kettlewell-on-Trent, Nottingham.
John Thompson, Badminton, Chippingham.

HEREFORDS.

OXEN OR STEERS.—First prize, £15, and extra prize of £20, for the best Hereford, William Heath, Ludham Hall, Norwich; second, £10, Thomas Dew, Almley, Herefordshire; third, £5, Henry Bettridge, East Hanney, Wantage, Berks; reserved, Aaron Pike, Mitton, near Tewkesbury.

STEERS.—First prize, £15, John Price, Court House, Pembridge; second, £10, Henry Bettridge, East Hanney, Wantage, Berks; third, £5, John Williams, Saint Mary's Farm, Kingsland, Herefordshire.

Cows.—First prize withheld; second, £10, William George Senty, Old Saffron Court, near Hereford; third, £5, Joseph Craddock, Easington, Northleach, Gloucestershire.

HEIFERS.—First prize, £15, and silver medal as breeder, Thomas Garrett, Compton Scorpion; second, £10, John Hungerford Arkwright, Hampton Court, Leominster, Herefordshire; third, £5, her Majesty the Queen, Windsor Castle.

SHORTHORNS.

OXEN OR STEERS.—First prize, £15, Colonel Lloyd-Lindsay, M.P. Lockinge Park, Wantage, Berks; second, £10, Rowland Wood, Clapton, near Thrapston, Northamptonshire; third, £5, Marquis of Anglesey, Beauchamp, Rutland.

STEERS.—First prize, £15, and silver medal as breeder; extra prize of £20 for best Shorthorn, and extra of £15 for best Shorthorn bred and fed by exhibitor; President's Cup, value £25, for best ox or steer of any breed or age, bred and fed by the exhibitor; extra of 25 guineas as best animal in the cattle classes, and £20 as the best ox or steer of any breed or age, selected from all the classes.—The Earl of Aylesford, Packington Hall, Coventry; second, £10, Rowland Wood, Clapton, near Thrapston, Northamptonshire; third, £5, John Chyden, Littlebury, near Saffron Walden, Essex.

Cows.—First prize £15, and silver medal as breeder, extra £20 for the best cow or heifer of any breed or age, selected from all classes, Sir Walter Calverly Trevelyan, Wallington, Newcastle-upon-Tyne; second £10, Messrs. A. and A. Mitchell, Alton, Chackmannan; third £5, James Whyte, Clinterty, Aberdeen.

HEIFERS.—First prize £15, Col. Chas. Towneley, Towneley, near Burnley; second £10, Thos. Atherton, Chapel House, Spate; third £5, James Reid, Graystone, Alford, Aberdeenshire. Reserved: William Tidy, Middleton, Tamworth.

DEVONS.

OXEN OR STEERS.—First prize £15, and extra £20 for best Devon, Walter Farthing, Stowey Court, Bridgwater, Somerset; second £10, Richard Burton, Place Barton, Broadclyst, Devon; third £5, Wm. Smith, Hoopers, Exeter. Commended: Chas. Gibbs, Bishops Lydeard; William George Nixey, Upton Court Farm, Slough, Bucks.

STEERS.—First prize £15, and silver medal as breeder, and extra £10 as best Devon, bred and fed by the exhibitor, C. Hambro, Milton Abbey, Blandford, Dorset; second £10, W. Geo. Nixey, Upton Court Farm, Sough, Bucks; third £5, Chas. Gibbs, Bishops Lydeard.

Cows.—First prize £15, Walter Farthing, Stowey Court, Bridgwater, Somerset; second £10, John Hitchcock, Broomhouse, South Molton, Devon; third £5, William Smith, Hoopers, Exeter.

HEIFERS.—First prize £15, and silver medal as breeder, Walter Farthing, Stowey Court; second £10, W. Geo. Nixey, Upton Court Farm; third, William Smith, Hoopers.

LONGHORNS.

OXEN OR STEERS.—First prize £10, and silver medal as breeder, Joseph Holland Barbary, The Chase, Kenilworth; second £5, Sir John Harpur Crewe, Calke Abbey, Derbyshire.

Cows or Heifers.—First £10, and silver medal as breeder, W. T. Cox, Spondon Hall, Derby; second £5, John Godfrey, Wigston Parva, Hinckley.

SCOTCH BREEDS.

POLLED OXEN OR STEERS.—First prize £15, and silver medal as breeder, and extra 10 guineas for best Scot bred by the exhibitor, and £20 for the best Scot, James Stephen, Conglass, Inverurie, Aberdeenshire; second £10, Andrew Longmore, Linkfield, Rattie, Banffshire.

WEST HIGHLAND OXEN OR STEERS.—First prize £15, Capt. Gunter, The Grange, Wetherby, Yorkshire; second £10, Messrs. J. & W. Martin, Aberdeen; third £5 Geo. Lawson, Clynelish, Broma, Sutherlandshire, N. B.

SCOTCH Cows or HEIFERS.—First prize £15, Sir Walter Calverly Trevelyan, Wallington, Newcastle-upon-Tyne, Northumberland; second £5, James Reid, Graystone, Alford, Aberdeenshire.

WELSH BREEDS.

OXEN OR STEERS.—First prize £15, Capt. Henry Platt, Gorrindog; second, £5, Capt. Henry Platt.

OTHER PURE BREEDS AND CROSS-BRED ANIMALS.

FAT OXEN OR STEERS.—First prize £15, Messrs. J. & W. Martin, Aberdeen; second £10, John P. M'Pherson, Muirtown, Kinloss, Forres, Elgin; third £5, Aaron Pike, Milton, near Tewkesbury, Gloucestershire.

FAT Cows or HEIFERS.—First prize 15, and silver medal as breeder, Harry L. L. Morrison, Blair Guise, Whitehouse, Aberdeenshire; second £10, Aaron Pike, Milton, Tewkesbury; third £5, Gilbert Mitchell, Meikel Haddo, Newburgh by Aberdeen. Commended: Alexander Cowie, Crombley Bank, Ellen, Aberdeenshire.

EXTRA CLASSES.

For animals not qualified to compete in any of the preceding classes.

OXEN OR STEERS.—[No entry].

Cows or HEIFERS.—Prize, £5, and silver medal as breeder, John Walker, Westfield, Holmer, Hereford [only entry].

SHEEP.

JUDGES.—C. Clarke, Scoopwick, Lincoln.

H. Luger, Ingham, Bury St. Edmunds.

Thomas Mansell, Ercall Park, Wellington, Salop.

LEICESTERS.

Three fat wethers, not exceeding 22 months old.—First prize, £15, and silver medal as breeder, an extra prize of £10, Lord Berners, Keythorpe Hall, Leicester; second, £10, William Browne, Higigate, Holme-on-Spalding-Moor, Yorkshire; third, £5, William Browne, Higigate. Commended: Executors of Francis Jordan, Eastburne, Driffield, Yorkshire.

LINCOLNS.

Three fat wethers not exceeding 22 months old.—First prize, £15, silver medal as breeder, and extra prize of £10, John Byron, Kirby Green, Sleaford, Lincolnshire; second, £10, T. R. Casswell, Quadring, Spalding; third, £5, Richard Newcomb Morley, Leadnam, Grantham.

COTSWOLDS.

Three fat wethers not exceeding 22 months old.—First prize, £15, silver medal as breeder, and extra prize of £10, Sir John Rolfe, Osleworth Park, Wotton-under-Edge; second, £10, Richard Hall, Great Barford, Deddington, Oxon; third, £5, John Baldwin, Luddington, Stratford-on-Avon.

SOUTHDOWNS.

Three fat wethers not exceeding 22 months old.—First prize, £15, silver medal as breeder, and extra prize of 10 gu., Lord Walsingham, Merton Hall, Thetford, Norfolk; second, £10, Lord Walsingham; third, £5, Lord Sondes, Elmham Hall, Thetford, Norfolk. Commended, Lord Walsingham.

SHROPSHIRE.

Three fat wethers not exceeding 22 months old.—First prize, £15, silver medal as breeder, and extra of 10 gu. for best pen of 3 Shropshires, Lord Cheaham, Latimer, Chesham, Bucks; second, £10, Lord Cheaham; third, £5, Thos. Nook, Sutton Maddock, Shifnal. Highly commended: William Yates, Brindle House, Shifnal, Salop. Commended: Henry Matthews, Montford, near Shrewsbury. The class commended.

Three fat wethers, exceeding 22 but not exceeding 34 months old.—Prize of 10 gu., as best pen of 3 two-shear Shropshire wethers, and silver medal as breeder, Mrs. Beach, The Hattons, Brewood, Penkridge, Staffordshire.

OXFORDSHIRES.

Three fat wethers, not exceeding 22 months old.—First prize, £15, and silver medal as breeder, and extra of £10 for best pen of Oxfordshires, Alfred Rogers, Bromham, near Bedford; second, £10, Zachariah W. Stilgoe, Adderbury Grounds, Oxon; third, £5, Nathaniel Stilgoe, the Manor Farm, Adderbury, Oxon.

SHEEP NOT QUALIFIED TO COMPETE IN ANY OTHER CLASS.

Three fat wethers, not exceeding 22 months old.—First prize, £15, and silver medal as breeder, Col. Loyd-Lindsay, Lockinge Park, Wantage, Berks; second, £5, John Walker, Bearwood, Wokingham, Berks. [both hens Hampshire].

CROSS BREEDS.

Three fat wethers, not exceeding 22 months old.—First prize, £15, and silver medal as breeder, Nathaniel Stilgoe, the Manor Farm, Adderbury, Banbury; second, £5, Zachariah W. Stilgoe, Adderbury Grounds, Oxon.

FAT PIGS.

JUDGES.—A. F. M. Druce, Burghfield, Reading.
E. Little, Lanhill, Chippenharn.

Three fat pigs of one litter, not exceeding 10 months old.—First prize, £10, and silver medal as breeder, John Treadwell, Upper Winchendon, Aylesbury; second, £5, Thomas Lealie Melville Cartwright, Melville, Ladybank, and Newbottle, orthamptonshire; third, £3, the Queen, Windsor Castle.

Three fat pigs of one litter, not exceeding 15 months old.—First prize, £10, and silver medal as breeder, and extra of 5 guineas, as best pen of three fat pigs, the Queen, Windsor Castle; second, £5, John Lynn, Church Farm, Stroxtan, Grantham; third, £3, Joseph H. Clark, Altwood, Maidenhead, Berks.

Fat pig exceeding 15 months old.—First prize, £6, and silver medal as breeder, Peter Eden, Cross-lane, Salford, Manchester; second, £4, Mrs. Beach, The Hattons, Brewood, Penkridge, Staffordshire; third, £2, W. J. Sadler, Bentharn, Calcutt, Cricklade. Highly commended: Thomas Bantock, Merridale House, Wolverhampton; Joseph H. Clark, Altwood, Maidenhead.

BREEDING PIGS.

BERKSHIRES.

Five pigs of one litter, exceeding 3 and not exceeding 6 months old.—First prize, £10, and silver medal as breeder, and extra of 5 guineas, for best pen of Berkshires, John Spencer, Villiers Hill, Kemilworth; second, £5, Richard Fowler, Broughton Farm, Aylesbury; third, £3, Captain Stewart, Saint Bridge House, Gloucester.

PIGS OF OTHER LARGE BREEDS.

Five pigs of one litter, exceeding 3 and not exceeding 6 months old.—First prize £10, and silver medal as breeder, James and Frederick Howard, Britannia Farm, Bedford; second, £5, John Fisher, Woodhouse, near Cross Hills, Yorkshire.

PIGS OF A SMALL BREED.

Five pigs of one litter, exceeding 3 and not exceeding 6 months old.—First prize, £10, and silver medal as breeder, and extra of 5 guineas, for the best pen of pigs of a small breed, John Lynn, Church Farm, Stroxtan, Grantham; second, £5 Peter Eden, Cross Lane, Salford, Manchester; third, £3, The Queen, Windsor Castle.

REFERENCE FOR THE AGES OF STOCK.—Professor Gamgee, Queen's-road, Baywater, London.

VETERINARY INSPECTOR.—E. Stanley, 35, Ialington, Birmingham.

CORN.

JUDGES.—Edward Davenport, Erdington.

J. Matthews, Edgbaston, Birmingham.

White wheal, sample of one bushel each.—First prize, £2, Col. Lloyd-Lindsay, Stocking Park, Wantage, Berks (Talavera); second, £1, Joseph H. Clark, Altwood, Maidenhead (Chidham); Highly commended: Joseph Greatorex, Stretton, near Burton-on-Trent. Commended: Henry Frampton, Watership, Sidmonton, Newbury, Berks (Chidham).

Wheat, red, samples of one bushel each.—First prize, £2, Thos. Horley, jun., The Fosse, Leamington (Nursery); second, £1, Richard Hall, Great Barford, Deddington, Oxon.

Barley, samples of one bushel each.—First prize, £2, Edward Parrott, Shirburn Farm, Tetworth, Oxon (Hallett's Pedigree); second, £1, Henry Frampton, Watership, Sidmonton, Newbury, Berks (Hallett's Pedigree Chevalier).

Oats, white, samples of one bushel each.—First prize, £2, Joseph Greatorex, Stretton, near Burton-on-Trent; second, £1, Frederick Lythall, The Spittal Farm, Banbury (Australian). Commended: E. Morley, Sapcote, Hinckley, Leicestershire.

Oats, black, samples of one bushel each.—First prize, £2, Frederick Lythall, Spittal Farm, Banbury; second £1, Richard Hall, Great Barford, Deddington, Oxon.

Beans, samples of one bushel each.—First prize, £2, Joseph H. Clark, Altwood, Maidenhead (White Eyes); second, £1, Frederick Lythall, Spittal Farm, Banbury (French Eyes).

Peas, white, samples of one bushel each.—First prize, £2, Joseph H. Clark, Altwood, Maidenhead (Ringwood Marrow); second, £1, Frederick Lythall, Spittal Farm, Banbury (Banbury Prize-taker).

Peas, blue, samples of one bushel each.—First prize, £2, Frederick Lythall, Spittal Farm.

Peas, grey, samples of one bushel each.—First prize, £2, Frederick Lythall (Partridge).

ROOTS.

JUDGES.—Edward Davenport, Erdington.

J. Matthews, Edgbaston, Birmingham.

A silver cup of five guineas, for best collection of Long Mangold Wurzel, Globe Mangold Wurzel, and Swedes, six roots of each to be shown for this prize only.—Sir William Heathcote, Hursley Park, Winchester (Hall's Mangold, and Hall's Imperial Westbury Swede).

Kohl-rabi (six specimens).—First prize, £2, Geo. Fleming, Groundsall Fields, Stone, Staffordshire; second, £1, Colonel North, Wroxton Abbey, near Banbury.

LONG MANGOLD WURZEL, (six specimens).—First prize, £2, and extra of £2 2s. Geo. Baylis, Gayton Farm, near Rose, Herefordshire (Sutton's Mammoth); second, £1, William Dickinson, New Park, New Forest, Lymington, Hants. Highly commended, John Moore, Warwick; commended, Sir Frederick Smythe, Acton Burnell, near Shrewsbury.

GLOBE AND INTERMEDIATE VARIETIES OF MANGOLD WURZEL (six specimens).—First prize, £2, and extra of £2 2s., Sir Frederick Smythe Bart., Acton Burnell; second, £1, William Dickinson, New Park, New Forest, Lymington, Hants. Commended: Col. North, Wroxton Abbey, near Banbury; John Hicken, Dunchurch, near Bagby.

SWEDES OF ANY VARIETY (six specimens).—First prize, £2, and extra of £2 2s., John Moore, Warwick (Bangholm); second, £1, Duke of Portland, Cliptone Park Farm, Mansfield, Notts. Commended, Alfred Hall, Westbury Farm, Westbury, Wilts (Hall's Westbury, two specimens); James Simson, Cloona Castle, Hollymount, county Mayo (two specimens); Zachariah W. Shilgoe, Adderbury Grounds, Oxon (Purple Top).

COMMON TURNIPS, White-flesh (Six specimens).—First prize, £2, Duke of Portland, Cliptone Park Farm, Mansfield, Notts; second, £1, Joseph H. Clark, Altwood, Maidenhead (Green Globe). Highly commended: Duke of Portland. Commended: Wm. Geo. Nixey, Upton Court Farm, Slough, Bucks (Greystone).

COMMON TURNIPS, Yellow-flesh (Six specimens).—First prize, £2, James Stephen, Conglass, Inverury, Aberdeen (Green-topped Aberdeen yellow); second £1, Thos. Leslie Melville Cartwright, Melville, Ladybank, and Newbottle, Northamptonshire (Aberdeen yellow-bullock). Commended: James Simson, Cloona Castle, Hollymount, Co. Mayo; Thos. Leslie Melville Cartwright (Wilson's Nonesuch).

CABBOTS, of any Variety (Six specimens).—First prize, £2, Duke of Portland, Cliptone Park Farm, Mansfield, Notts (Altringham); second, £1, Duke of Portland (Altringham). Commended: Richard Dickinson, New Park, New Forest, Lymington, Hants (White Belgian); Duke of Portland (Altringham).

Ox Cabbage (three specimens).—First prize, £2, Saml. Robinson, Shaw House, Melbourne, Derby (Robinson's Champion); second, £1, Saml. Robinson (Robinson's Champion). Commended: John Hicken, Dunchurch, near Bagby (Robinson's Drumhead).

POTATOES.

Ashleaf Kidneys (twelve specimens).—First prize, 15s., Fredk. Lythall, Spittal Farm, Banbury; second, 10s., John Choyce, Pinwall Grange, Atherstone.

Rivers' Royal Ashleaf Kidneys (12 specimens).—First prize, 15s., Fred. Lythall, Spittal Farm; second, 10s., John Choyce, Pinwall Grange.

Gloucestershire Kidneys (twelve specimens).—First prize, 15s., John Choyce; second, 10s., John Choyce.

Daintree's First Early (twelve specimens).—First prize, 15s., John Choyce.

King of Potatoes (twelve specimens).—First prize, 15s., John K. Fowler, Prebendal Farms, Aylesbury; second, 10s., John Choyce.

Wheeler's Milky White (12 specimens).—Prize, 15s., John Choyce.

Flukes (12 specimens).—First prize, 15s., Richard Hall, Great Barford, Oxon; second, 10s., John Choyce.

Dalmahoy (12 specimens).—First prize, 15s., T. B. Wright, Quarry House, Great Barr, Staffordshire; second, 10s., John Lynn, Church Farm, Stroxtan, Grantham.

Red Regents (12 specimens).—First prize, 15s., John K. Fowler, Prebendal Farms, Aylesbury; second, 10s., F. Gottwalt, Birmingham. Highly commended: John Choyce. Commended: Duke of Portland, John Choyce, Fred. Lythall.

Paterson's Victorias (12 specimens).—First prize, 15s., W. W.

Pearce, Mesaham, Atherstone; second, 10s., Fredk. Birch, Perry Barr, near Birmingham. Highly commended: W. W. Pearce.

Sherry Blues (13 specimens).—Prize, 15s., John Choyce. Any other named variety (13 specimens).—Prize, 15s., John K. Fowler (Shackel's Conqueror). First prize, 15s., Sir Fredk. Smythe, Acton Burnell, near Shrewsbury (Lapstone Kidney); 10s., Richard Hall; 10s., Duke of Portland (Dunbar Regents). Highly commended: John K. Fowler (Fowler's Seedling); John Shackel, Blenheim House, Small Heath, near Birmingham (Lapstone Kidney). Commended: John Choyce (Berkshire Hero), John Choyce (Wedington); J. H. Brakenridge, Chew Magna, near Bristol (Aldridge Kidney).

Winners of the cups for the poultry: Dorking (coloured, except silver grey) cocks of 1869.—Mrs. Arkwright, Scarsdale, Chesterfield.

Dorking pullets (coloured, except silver grey).—Henry Crowley, Broomfield, Halifax.

Cochin China (cinnamon and buff) cocks exceeding a year old.—W. A. Taylor, Turner-street, Manchester.

Ditto cocks hatched in 1869.—William Sanday, the Cliffe, Batcliffe, Notts.

Ditto hens exceeding a year old.—W. A. Taylor.

Ditto pullet.—James Cattell, Lime Villa, Bristol Road, Birmingham.

Brahma pootra (dark), cocks over a year old.—Mrs. Hurt, Alderwoaley, Derby.

Brahma pootra (dark), pullets.—Mrs. Hurt.

Polish fowl (silver), cocks of any age.—George C. Adkins, The Lightwoods, near Birmingham.

Any variety, cock and one hen of any age.—Charles F. Montresor, Stoke House, Slough, Bucks (Indian game "Bajra," bred in England).

Game (black-breasted reds), cocks hatched 1869.—Charles Chaloner, Steetley Farm, Whitwell, Chesterfield.

Game pullets (black-breasted reds).—Edmund C. Gilbert, Penkridge.

Game (duckwings and other greys and blues), cocks exceeding a year old.—Samuel Matthew, Stowmarket, Suffolk.

Game bantams (black-breasted reds), cock and two hens.—John Croaland, jun., Thorne's Lane, Wakefield.

Ducks (white Aylesbury), drake and one duck.—Mrs. Burrell, Stoke Park, Ipswich.

Ducks (Rouen), Thomas Statter, Stand Hall, Whitefield, Manchester.

Ducks (black East Indian), drake and one duck.—Mrs. Hayne, Fordington, Dorchester.

BUTLAND AGRICULTURAL SOCIETY.

MEETING AT OAKHAM.

The show on the whole was the largest yet held by this Society, all the available space in the Riding School being occupied by animals of one kind or another. The entry of cattle, however, was considered to be rather a poor one, being inferior both in number and quality to previous years; nevertheless there were some very fair animals entered for competition, particularly a roan ox, belonging to the Marquis of Exeter; a red steer, the property of Mr. R. Wood, Clapton, and a roan cow, shown by Mr. T. Willis, Caperby, Yorkshire. The falling of in beasts was in a great measure compensated for by the extra number of sheep, horses, and pigs. The show of sheep was good, as many as 93 animals being penned, and the awarding of the prizes in the several classes occupied the judges a long time. The number of pigs was double that of any former year, and for size and weight were never surpassed at this show. The entries in the horse classes were very numerous compared with former years, animals adapted for hunting purposes and three and four-year-olds being exceedingly well represented. There were 68 horses in all, and 7 ponies, out of which number 58 were entered as fit for hunting. The dinner, in the Exchange Hall, was presided over by Lord Aveland.

JUDGES.

Stock.—R. Doig, Lillingstone Hall, Bucks.

G. Drewry, Holker House, Lancashire.

R. Fisher, Leconfield, Yorkshire.

Horses.—The Hon. Col. Lowther, Barleythorpe Hall.

The Hon. G. J. Noel, M.P., Catmose.

R. Lucas, Edithweston.

CATTLE.

Ox or steer, of any breed or weight, exceeding three year and three months old (open to all England).—First prize, £15, Marquis of Exeter, Burghley Park; second of £7, Sir W. de Capell Brooke, Geddington Grange.

Ox or steer, of any breed or weight, not exceeding three years and three months old (open to all England).—First prize, £10, R. Wood, Clapton; second of £5, T. Pulver, Broughton.

Cow, of any breed, age, or weight (open to all England).—Prize, £10, T. Willis, Caperby, Yorkshire.

Steer, under two years and six months old, fed within the district.—First prize, £10, R. Searson, Cranmore Lodge; second of £5, C. J. Bradshaw, Barley-on-the-Hill.

For the best beast shown in the Open Cattle Classes.—Prize, Coppingham school medal and extra premium of £25, R. Wood.

Tenant farmers for the best cow above three years old.—First prize, £10, W. Fowler, Manton; second of £8, R. Searson.

Tenant-farmers for the best heifer above two and under three years old, bred within the district.—First prize, £7, R. Searson; second of £5, C. Chapman, Exton.

Tenant-farmers for the best heifer under two years old, bred within the district.—First prize, £7, R. Searson; second of £4, C. Chapman.

Young bull above twelve and not exceeding twenty months old.—First prize, £10, Marquis of Exeter; second of £5, T. Swinger, Langham.

Cow in milk.—First prize, £5, J. Harris, Langham; second of £2, T. Clarke, Edithweston.

Heifer under three years old.—First prize, £4, W. Rudkin, Oakham; second of £2, G. Chester, Waltham.

Heifer calf above six and under twelve months old.—First prize, £2, Mrs. M. Hammond, Egleton; second of £1, W. Hubbard, Langham.

Breeding beast shown as extra stock.—Prize of £5 5s., R. Searson.

Best beast shown in Classes 6, 7, 8, 10, 11, 12, or 13.—Prize of £10, R. Searson.

Fat beast above two years and six months old, shown as extra stock.—Prize of £5, T. Pulver, Broughton.

SHEEP.

Three long-woolled fat wether sheep, one year old (open to all England).—First prize, a silver cup or £10, B. Painter, Burley-on-the-Hill; second of £5, Lord Berners, Keythorpe Hall.

Tenant-farmers for the best three long-woolled fat wether sheep, one year old, bred and fed within the district.—First prize, £10, B. Painter, Burley-on-the-Hill; second of £5, W. Shipman, Eaton Lodge.

Four long-woolled breeding ewes, bred within the district.—First prize, £5, Colonel Lowther, Barleythorpe Hall; second of £3, W. Shipman.

Four long-woolled ewes, bred and fed within the district.—First prize, £5, Colonel Lowther; second of £3, W. Shipman.

Four long-woolled wether lambs, bred and fed within the district (ram lambs excepted).—First prize, £4, Colonel Lowther; second of £3, W. Shipman.

Four long-woolled ewe lambs, bred and fed within the district.—First prize, £4, Colonel Lowther; second of £2, W. Shipman.

Best Sheep shown as extra stock (open to all England).—Prize of silver medal value 5 guineas, T. W. D. Harris, Wootton.

PIGS.

Best fat pig under 18 months old (open to all England).—First prize, £5, R. Pawlew, Manton; second of £3, Carver and Sons.

Fat pig, under 10 months old, not to exceed 30 stone live weight (open to all England).—First prize, £5, R. Pawley second of £3, W. Carver and Sons, Ingarsby.

Fat pig of any weight.—First prize, £3, T. Munday, Langham; second of £1, G. Smith, Ashwell.

HORSES.

Mare for agricultural purposes.—First prize, £5, J. Silverwood, of Thistleton; second of £3, T. Woods, Wychley Warren.

Cart horse under seven years old.—First prize, £5, T. Woods; second of £3, C. J. Bradshaw, Burley.

Hunting mare or gelding above five years old (open to all England).—First prize, £20, J. Drage, Moulton Lodge; second of £10, B. F. Drage, Hannington.

The best four-year-old hunting mare or gelding, bred within the district.—First prize, £20, B. Prior, Leighton; second of £10, R. L. Healey, Hambleton.

Farmers or tradesmen for the best three-year-old hunting mare or gelding, bred within the district.—First prize, £10, T. Cross, Guadalupe; second of £5, R. Stokes, Allerton.

Tenant farmers or tradesmen for the best mare for breeding hunters.—First prize, £5, J. Hornsby, Grantham.

Hackney mare or gelding under seven years old, not exceeding 15 hands.—First prize, £10, R. H. Hack, Stapleford; second of £5, E. Gimson, Southorpe.

Ponies under seven years old, not exceeding 13 hands.—First prize, £3, C. J. Bradshaw, Burley; second, a hunting whip, N. Whitechurch, Melton.

THE DORCHESTER FARMERS' CLUB.

At the dinner following the show, Mr. FORESTER, the chairman, said: Regarding the proceedings of the year some very interesting subjects had come on for discussion; the meetings had been very well attended. He was happy to say that the same fault could not be found regarding the meetings was found at Dorchester. At the last meeting 34 members were present, which was not a large number for the Blandford Farmers' Club. He hoped that as time went on the members would rally round the chairman. A most gratifying fact in connection with his presidency was the accession of 19 members to the club—intelligent young farmers of that neighbourhood, and also including two or three professional gentlemen of the town. This filled him with great hope as to the future success of the club. He sincerely trusted that as time went on the club would continue to prosper. He had really little doubt of it himself. He was sure that a considerable amount of good had been derived from the expression of feeling and interchange of ideas at their meetings. He must confess that at one time—when the Chamber of Agriculture at Dorchester was formed—he was rather afraid that the little club of Blandford would fall into the shade. Dorchester, however, was not conveniently situated, and the existence of these local Farmers' Clubs was, therefore, highly essential to the success of agriculture.

Mr. ALLEN, of Tisbury, one of the judges, said: This year there had not been a very large show; consequently the duties of the judges were not arduous. He was pleased to observe that the prizes did not take the form of plate, but were in the current coin of the realm, thus enabling the winners to do whatever they liked with the money.

Mr. HARDING also replied. In his opinion the show, as far as numbers of animals on the ground went, might be set down as a failure; still it must be admitted that some very superior animals were shown. He perfectly agreed with Mr. Keynes that it was the duty of members of the club to bring their stock out. These shows were very beneficial to young farmers, who were afforded the opportunity of marking the difference between good animals and bad ones, and therefore were materially assisted in their judgment in the selection of stock. He was indeed pleased that the show was now so well established, for he claimed the credit of having assisted to originate it.

Mr. FORD said that it had been remarked that he kept his animals too well; but on this point he was of a different opinion. He had been taught by his father to pay particular care of the young stock, not to give them inferior food. He had made it a rule to keep the young stock as well as possible. He had been pleased that day to hear the Southdowns commended. He knew it had been stated that the day had gone by for Southdown—that they would go out and make way for a better class of sheep. But he entertained a different opinion. He did not think, however, that there were any sheep which suited the Dorset hills better than the Southdowns, with their strong good constitutions. Another thing, if they wanted good mutton they must have it from the Southdowns. They knew very well that there were different opinions respecting stock, and he dare say that some of the grocer and bigger animals were suited for some of the lowlands. "The improved" Hampshires were very justly called so, because they were very much improved compared to what they were 20 years ago.

Mr. R. FOWLER had observed that a blue-book had been published, containing some "startling revelations" as to the life of the Dorsetshire labourer and his family. The evidence of a shepherd's wife near Blandford, as taken by Mr. Stanhope, the assistant-commissioner for the district, under the Women and Children's Employment Commission, was recorded in this blue-book. He (Mr. Fowler) intended to get the whole report, which should, he thought, be taken into consideration by all the clubs of the county. And he hoped the doors would not be shut to the reporters of the public press. It appeared that the Dorchester Farmers' Club had determined to try the experiment of excluding reporters from their meetings; but he for one believed that no society could possibly succeed to any great extent without the aid of the public press.

PRIZE LIST.

JUDGES.—Messrs. G. Harding, Newbury; Allen, Tisbury; and E. Sims, Pitcombe.

HORSES.

Cart mare or gelding, worked regularly on the farm.—First prize, £3, J. Coate, Hammoor; second, £1, G. Keynes, Speabury.

Cart mare or gelding.—First prize, £3, J. Coate; second, £1, G. Keynes.

Hackney gelding or filly, under four years old.—First prize, £3, J. Rooster; second, £1, R. Dornay, Pimpers.

Cob, under 14 hands 3 inches high.—First prize, £3, G. Keynes, jun.; second, £1, W. Warren, Chettle.

SHEEP.

Pen of six six-tooth Hampshire Down ewes in lamb.—Prize, £2, R. Rogers, Chettle.

Pair of Hampshire Down ram lambs.—First prize, £2, R. Rogers; second, £1, J. Friend, Gussage.

Six Hampshire Down ewe lambs.—First prize, £2, R. Rogers; second, £1, H. Ford, Gussage.

Pen of six six-tooth Southdown ewes in lamb.—First prize, £2, H. Fookes, Whitechurch; second, £1, G. Keynes.

Southdown ram.—Prize, £1, H. Fookes.

Pair of Southdown ram lambs.—Prize, £2, H. Fookes.

Pen of six Southdown ewe lambs.—First prize, £2, and second, £1, J. Ford, Raston.

CATTLE.

Dairy cow.—First prize, £3, R. Eyers; second, £1, C. C. Bartlett, Durweston.

Heifer under three years old, in calf or in milk.—First prize, £3, and second, £1, J. Ford.

Heifer under two years old.—First prize, £3, C. Flower, France Farm; second, £1, C. C. Bartlett.

Pair of working oxen.—First prize, £2, C. Flower; second, £1, J. Ford.

Pair of steers under three years old.—First prize, £3, and second, £1, J. Ford. Highly commended, J. Coate.

PIGS.

Breeding sow, in farrow or with her litter.—First prize, £3, J. Coate; second, £1, H. Senior, Hinton St. Mary.

Boar.—First prize, £3, J. Coate; second, £1, T. Fry, Iwerne Minster.

CORN AND ROOTS.

Sack of barley.—Price, £1, J. Ford. Highly commended,
C. Flower.
Sack of oats.—Price, £1, T. Fry.
Twelve mangold wurtzels.—Price, £1, S. Davis, Blandford.

Twelve swedes.—Price, £1, J. Friend, jun. Highly com-
mended, W. Arnold, Blandford.
Twelve turnips.—Price, £1, G. Groves, Milborne St.
Andrew. Highly commended, G. Hill.

THE NEW MARKETS IN LONDON.

The necessity of open markets in the centres of consump-
tion, is so obvious, that on the large scale their existence
within reasonable distance is the one circumstance that re-
gulates not only the question of profit and loss in favour of
the producer, but that also of production itself. Without a
market within a reasonable distance, affording a demand at
a remunerating return, production must be confined to the
local consumption. This is one of the laws of social
economy. Markets are equally needful between the re-
tailer who comes between the wholesale dealer and the
final consumer; and these must be placed or held in situa-
tions the most convenient for the buyers, so that they may
supply themselves at the least expense of time and labour,
both of which, to an industrious man or woman, are of
considerable importance.

The eastern districts of London are badly supplied
in this way. We know of none of any importance
beyond Whitechapel in the east, and north and north-
west of Aldergate Street; and the want of such
centres of domestic commerce is so palpable, that two
very costly efforts have been made to supply the deficiency.
The demolition of whole streets at Somers-town and the
Pancras-road, to make room for the terminus of the
Midland Railway, left a considerable unoccupied space,
which suggested to some enterprising individuals the idea
of erecting upon it a large market for general purposes.
A company was formed, and the idea carried into effect in
the most complete manner. The shops were most of
them let to respectable tradesmen, some of whom had
taken shares. But the result was a failure. The
people in the neighbourhood, most of whom are of
the working classes, would never go to the new market,
nor would the costermongers, by whom those classes are
chiefly supplied, take their stand in it. The conse-
quence was that after a short struggle the shops were
abandoned, and King's-cross Market shut up.

A similar attempt has been made in the neighbourhood
of Shoreditch, one of our largest centres of consumption.
This effort was made by the benevolent Miss Burdett Coutts,
who, having erected a large square for the benefit of the
working classes, conceived the idea that a market would be a
great accommodation to that populous neighbourhood.
No expense was spared in the erection, and every inducement
of accommodation for both buyers and sellers was
provided in the arrangements. The institution was in-
augurated with a religious service, at which the bishop of
the diocese officiated. The shops were most of them let,
and everything looked promising. But, like its prototype
at King's-cross, it does not succeed. Many of the shops
have been given up, and *Columbia Market*, instead of
being self-supporting, is nearly ignored by the dense
population for whose benefit it was erected. It is said
that, if even the numerous tenants of Columbia-square,
who enjoy the benefits of Miss Coutts' outlay in its
erection, would patronise in their turn this second effort
of hers, it would alone turn the scale in favour of its sup-
port; but they will not do so.

It is painful to see the efforts of either public bodies or
private individuals, calculated to promote the comfort of
whole neighbourhoods, rendered abortive by the neglect
and indifference of those on whose co-operation the pro-

jectors depended for their success. It is true, in this latter
case, there were some errors committed in the first instance
by the undesigned exclusion of one class of dealers from the
market. The men referred to and the costermongers, who, in
the absence of regular markets, have grown into a formidable
body, by whom the working classes are chiefly supplied with
every kind of provisions. These irregular tradesmen, as
they may be termed, were invited to take stands in the
open area of the new market, paying at the rate of 1s. 6d.
per week, or £3 18s. per annum. Now, these men had
never been accustomed to pay anything for standing-room
on the edge of the pavement, or for driving the trucks or
donkey-carts about the streets, and besides, eighteen-pence
per week was no small tax upon their slender means; and
they at once declined the contract. The charge was next
reduced to a shilling a week, with no better effect.
Finally they were admitted free of all charge; but the
mischief was done, and they have pertinaciously declined
to accept even the free standing. The reasons for this
refusal to attend the new market are not solely the charges
levied. The tradesmen of the *passé* and of the open
street are the men who, by pitching their stalls in the
positions most convenient to their customers, and by
driving their donkey-carts or hand-trucks through
the streets literally serve goods at the very doors,
and at a cheaper rate than the regular tradesman, for a
very obvious reason. They are the men who clear off the
surplusage of vegetables, fruit, meats, and even in some
cases fowls and game, from the wholesale dealers, which
otherwise would not keep good another day, and which,
on that account, especially towards the end of the week,
must be sold at some price, or entirely lost. The coster-
mongers, therefore, are a most useful body of tradesmen,
however their noisy invitations to purchase may annoy the
quiet of a respectable street; while, on the other hand, the
wives of the working men supply themselves readily, and
at a cheap rate, with the articles they want for the same
or the next day, without leaving their families to go to
the regular shops. Whether the offer in the first instance
of a gratuitous stand in the area of the new market would
have induced them to attend it, is a question it is too late
to determine; but assuredly their refusal to do so under
the circumstances, has kept away those also of whom they
depend for their support—the working people, who, cling-
ing to old associations and old habits, resolve still to
patronise the men who bring the goods they require to
their doors at a cheaper rate than they can purchase at of
the regular tradesmen. In an economic point of view the
costermongers are a most useful body. They are the
scavengers of the wholesale dealers, clearing off the surplus
of supply. We know of no way of winning these
peripatetic and noisy dealers to the support of the new
market but an Act of Parliament prohibiting their irregu-
lar way of conducting their business; and we are very
sure that no Government would make such a law.

Of the more respectable tradesmen who, in the
first instance, took shops in the new market for two years,
many have already abandoned these, being quite hopeless
of inducing the neighbouring families to purchase there,
or of establishing a trade that will afford them a profit.
It is not at all improbable that by the time the two years are

expired the whole of the shops will be relinquished. This is much to be regretted; for it is probable that, by perseverance and by a liberal mode of dealing, the surrounding population might be induced to frequent the market. If we do not mistake, Farringdon Market was under a similar cloud in the first instance. It was a so much finer place than the old ram-shackle congeries of wooden booths, tents, and stalls that previously occupied the middle of Farringdon-street from Snow-hill to Bridge-street, that people fought shy of the new square. This, however, by degrees, became frequented, and it is now one of the best markets of the metropolis. Whether Columbia Market will ever become thus attended depends

in a great measure on the conduct and character for perseverance of the tradesmen at present attached to it, and of the views of the benevolent friendness of the institution. If the former would still hold to it, we are sure that Miss Coutts would not shrink from the task of supporting this for a few years' until the public have learned its value to themselves. But if those tradesmen forsake it, there will be no alternative for her but to give it up and appropriate the site to some other purpose. In such case the neighbouring population will find out in time that, through their neglect and indifference, they have lost an invaluable opportunity of establishing an excellent market on a spot where it is much wanted.

ENGLISH TENANT RIGHT.

At the last meeting of the Shropshire Chamber of Agriculture, at Much Wenlock, there was a very large attendance of members, Mr. Jasper More in the chair. The subject for discussion, "A System of Compensation for Unexhausted Improvements," stood in the name of Mr. EVAN DAVIES, who said: Having received a communication from your committee that I should take the lead at a meeting held in a town in which a large amount of my public labours have centred, I at once complied with the request, and I take this decision of the committee as a high compliment paid through me to the Much Wenlock Farmers' Club, which has laboured so earnestly, and, I hope, not unsuccessfully, in upholding the rights and furthering the interests of the tenant farmers of England. It is, therefore, not by choice, but in compliance with the behests of the committee, that I now appear before you, and if I fail in the task assigned to me, let them, not me, bear the blame. In entering upon our subject, it may be asked why it is necessary to discuss the merits of a question, the principle of which is now admitted by all except a few interested ones. Why, the fact is that the Legislature refuses to take action upon any matter until a large amount of agitation has taken place upon it. All the great measures passed of late years, which the country has now cause to be proud of, have been the result of pressure from without, rather than any initiative quality from within. Indeed, we see that the result of agitation on this question in Ireland has been to obtain the recognition of this right, not because in its abstract principle it is more required there than here—not that in its bearing it is more necessary now than it was a quarter of a century ago, but that it would not be safe to delay it any longer; and if we are to believe one of the Ministers, this agitation with violence is to be rewarded, not only to the amount of all that the tenants require, but is to be accompanied with a measure of interference with the vested interests of the country little short, if any, of confiscation. As a passing remark, I will here say that, however long this just measure may be denied to us—however much we may realise the sentiment that "hope deferred maketh the heart sick," sure am I that no tenant farmer in England or Scotland would for one moment encourage or countenance those violent measures to obtain our desires which have so disgraced the movement in Ireland; nor in seeking a measure of compensation for unexhausted improvements for the tenant, do we desire, or ever shall desire, that the rights of others should be assailed or interfered with. I have said that the tenant farmer will have recourse to none but legitimate means to obtain this security for his outlay, but I cannot answer for others. If the present high price of beef and mutton continue; if the labouring population are deprived of the enjoyment of this food by its high price, and if they become cognizant of the fact that the price is caused by a want of greater supply, and that this greater supply cannot be forthcoming unless the tenant farmer gets security for his capital, or, in other words, until there is a free trade in the cultivation of the soil, be assured that such an agitation will take place on this question that it will not be safe for any Government to ignore. I have said there are a few interested men adverse to this movement, who pooh-pooh this question, asserting that "tenant right is nothing more than landlord's wrong." I at once acquit the principals at both ends of the

chain from entertaining any such feeling, but it is the middle-men who so industriously propagate such a libel on the intelligence and respectability of the tenant farmers of England. I am willing to admit that the accomplishment of our desires will militate against the powers of these men to do evil—militate against the opportunity of these men to hold in durance vile those whom circumstances have placed in their power. These men further say, "Why is this measure necessary now—farming has gone on from time immemorial without it? Why does the tenant farmer require this protection now?" "Why, in one word, he has progressed: the very cry for this protection is the surest sign of a spirit of improvement and advancement in the pursuits of agriculture."—[Corbett's Prize Essay.] Had we been content to farm as our forefathers did before us; had we been satisfied with the least possible amount of produce raised at the least possible expense; had we been satisfied to leave our fences, as Colonel Corbett said at our club dinner, seven yards wide; had we been content to have our farms undrained, to see our cattle unhoused, and our cottages uncared for—then, perhaps, the want of compensation for unexhausted improvements would have been unnecessary and would have been unasked for. But, gentlemen, what is it we require? Nothing more than what others have obtained. The landlord asked for it: why may not we? The landlords required, the landlords petitioned, and the landlords obtained from the Legislation an Act of Parliament to enable them to claim from their successors compensation for unexhausted improvements. If a measure of this description was found necessary for a life tenant, how much more necessary for a tenant at will? If a landlord, although sure of his holding for life, considered it impolitic to effect any improvement on his estate without the power to charge such improvement on his successor, how much more a tenant subject to six months' notice to quit, and such notice often the result of the caprice of an agent or the evil suggestions of a gamekeeper. If the landlord refused to trust to the generosity of his own son to recoup him for improvements effected on the estate, without an Act of Parliament to compel him to do so, is it unreasonable of us if we say we cannot trust those who are no kindred in blood and often unknown in person, unless we have an Act of Parliament to compel them to do that which is just and right? In arguing this question, let us take the case of a tenant taking a farm out of condition, as under the present system they always will be taken out of condition, since no man in his senses, if he can foresee the termination of his tenancy, will not take all out of the farm he can, if unprovided with the means to obtain compensation for unexhausted improvements. Well, this tenant, an enterprising young man, at once lays out his capital freely—drains, manures, renews fences, and brings the farm into a creditable state of cultivation. Having done so, as a tenant at will, he at once becomes a slave to the caprice of others; a wrong vote at an election, a frown from the agent, or a quarrel with the keeper may at once rob him of the chance of obtaining the benefit of his improvements, and make him feel that a drawn sword is suspended over his head by the merest thread. But this question must now be taken out of the category of landlord and tenant. With our fast increasing population, it becomes a national question, and

affecting the feeding of our teeming millions. The time is gone by for the owner of land in England to say, "I have a right to do what I like with my own." A declaration of that kind now would have the effect it once had on one high in the peerage, who was obliged to flee from the halls of his ancestors and seek refuge among the rocks and mountains of Wales. Perhaps when the great landowners maintained at their own cost a sufficient number of armed retainers to secure to them the peaceable possession of their property, and when in all probability they fed their quantum of the population, under those circumstances they might, and I have no doubt did, say, "I have a right to do what I like with my own;" but now that they have been relieved from the expense of those armed retainers—now when the country has taxed itself to keep a standing army, to maintain local forces, and a large body of police to secure the landowner in the peaceable possession of his property, the country has a right to expect that the land shall be made available in the highest possible degree to produce food for the people. Talk of our seeking landlords wrong! What do we seek? Nothing more or less than a measure that will induce us to lay out our money freely in the improvement of the landlords' property. Gentlemen, I have been often told, and I have no doubt other farmers likewise, to send my sons into Norfolk or Lincolnshire, to learn farming there; I am told they will not only see farming in the very highest state of perfection, but that they will meet with men of the greatest intelligence, men of wealth in their calling, and men of independence in action and thought. And how have these two counties so signalized themselves? Why, simply that no Norfolk man would take a farm of any land lord without a lease, and no Lincolnshire man without a clause in his agreement securing to him compensation for unexhausted improvements on the termination of his tenancy. The high position of these two counties is the very strongest argument that can be adduced in favour of the measure I have now so imperfectly laid before you; and I cannot resist calling your attention to a short extract from Caird on Lincolnshire Farming. He says that in the parish of Limbirk, sixty years ago, four tenants occupied 4,000 acres of land, at 2s. 6d. per acre, and became bankrupt (laughter). The rent is now 20s., and the tenants are prosperous. And in Blankney several thousand acres were let as rabbit warrens at 2s. per acre, which now let at 20s., and in both cases with the increasing wealth of the tenants. Mr. Caird thus sums up:—"It was very fortunate, when the time of this transaction arrived, that the leading landlords were liberal and enlightened men. They saw the advantage of encouraging tenants to embark their capital freely, and as leases were not the fashion of the country they gave them that security for their invested capital which is termed tenant right, or compensation for unexhausted improvements." So you see, gentlemen, the granting of that measure which we now desire was the means of raising the tenant from bankruptcy to a state of affluence, and the landlords' rent from 2s. 6d. to 20s. Can I say more than this? But before I sit down you must permit me to read the last paragraph from one of the Prize Essays of the Wenlock Farmers' Club. The essayist, Mr. Henry Corbett, speaking of the general advantages that would accrue from the adoption of tenant right, says: "The paramount duty of the Government, the basis of the national prosperity, is the well-doing of the people; and people at this very moment are suffering more or less from the two great evils of over-population and want of employment, and want of food. In direct antithesis to this, the producible land of the kingdom is cultivated as if there were actually a scarcity of labour. The natural question that arises here is, how comes it that one evil is not made to destroy the other by the application of the labour to the land? Simply because there is a hesitation as to embarking capital to bring them together; and yet in the face of this hesitation it is generally allowed that nothing will pay a better interest than money laid out in the improvement of the soil. The people want employment; the land wants more cultivation! The use of capital refused, and yet no use of capital known to pay better! Paradoxes explained and removed by one simple remedy and right—security. Give but that, and you make the island, as it should be, mainly dependent on its own resources for food, and its people for support" I will now move, "That it is necessary for the encouragement of a better system in the cultivation of the soil that a legislative enactment should be obtained, giving to the tenant compensation for his unexhausted improvements."

Colonel CORBETT, M.P., had attended more in the hope of listening and learning than of making any remarks of his own; but after the very able and eloquent manner in which Mr. Davies had brought the subject before them, it was only properly respectful to him that the matter should meet with proper consideration. He agreed entirely with Mr. Davies that no prudent man in his senses would think of investing a large capital in a farm without a reasonable probability of compensation for unexhausted improvements; but few landlords would be so far wanting in all that was honest, upright, and proper as to eject a tenant because of his vote or of the captiousness of an agent or an ill-conditioned keeper. Every man who embarked his capital should feel himself safe from any interference of that sort. There was, however, a great deal of difficulty in the way of legislative action, and the subject required consideration. Certain improvements nobody would doubt being improvements: still there must be considerable power left in the hands of landlords to say what were really improvements, and how far they should take place on the property. A landlord might be so situated, pecuniarily, as to be unable to undertake considerable improvements, or, in justice to the younger branches of his family, to pay at once a large sum of money. Under a lease a man would know exactly how many years he could depend upon to recoup his expenditure. Drainage was an improvement, no doubt; on wet land they would never get their money if they did not drain it; and the landlord, if left to himself, would lay out money every year, as he could afford to do it; whereas if a tenant laid out £500 or £600, and went to another farm, he might throw the whole cost at once upon the landlord and leave him in an exceedingly unpleasant position. The answer to this was, that the landlord had only to fall back upon the Government loan, and he was safe. But his experience on the subject was, that the Government loan would only admit of one cut and dried system of 4ft. draining on all land; that it did not answer upon all lands so well as shallower draining, say 3ft.; that it was the last foot which cost, as 3ft. could be done at 8d. a rood, while it would take at least 13d. to go the fourth foot; and that the landlord could not, therefore, fall back altogether upon the Government loan to repay him for unexhausted improvements. Straightening and taking up fences were of course very great improvements; but the tenant might throw the cost of all these unexhausted improvements on the landlord, and the landlord be unable to meet them. If they were to have compensation for unexhausted improvements, they should have a well-defined scale laid down, under which the tenant might recoup himself in a certain number of years, or the landlord have a little time to pay. Since he had been in possession, and also in his father's time, he had had a scheme embodied in the agreement by which a tenant had twelve years to recoup himself; if he went at the end of one year, he had 11-12ths of what he had laid out; if at the end of eleven years, 1-12th only; and so on to nothing. It was a very excellent system, and worked well. But the system that would give most satisfaction to all, if properly understood, and did give most satisfaction in all agricultural districts, was the lease; as landlord and tenant became thoroughly used to the idea they would agree that that was the best and most satisfactory solution of the difficulty. He could not get a man to take a lease. The highest rents in all England were where the land was held on lease. There was a feeling that at the end of a lease the land was always re-valued and there was a rise. Leases, however, were the best for all parties, if a man had capital enough to warrant him in taking one, varying in years according to what he undertook to do, and whether the farm was in good or bad order. A lease of fourteen years would generally satisfy people if a farm were in good order; if it were in bad order, twenty-one years; and if it were in such a condition that it was like reclaiming waste land, thirty years would be none too much. Whatever the decision of the Chamber, this discussion could lead to nothing but good to both landlord and tenant.

Mr. J. BRIDGES, who seconded the resolution, fully concurred in all that had fallen from Colonel Corbett. The late Duke of Richmond offered to give every one of his tenants a lease if they would go and ask for it, and they said that they were perfectly satisfied. His grace told them that, although he should not take any advantage of them, his life could not last for ever. Depend upon it "that which cannot speak cannot lie;" and when the tenants had leases in black and white, they were safe, whatever took place. Some eleven

years ago he offered a nice little farm, in the Southern division of the county, either on lease or on a well-considered plan of compensation for permanent improvements. There were 200 applicants, but none would take it on lease, and only five or six seemed to entertain the notion of a system of compensation. At last he let it on a mere verbal agreement for a lease; but the estate being left him by will, it was found that he had not power given to him to lease. Consequently he was thrown upon his back, and the tenant was very ready to take advantage of it. This he believed to be the case in many instances. How primogeniture would be dealt with he did not know; but they should have to go to Parliament for a new law as a foundation for a system of dealing with the land. A succeeding tenant might not agree with his predecessor as to what should be considered permanent improvements. The subject required to be looked into; there was a very great deal to be said on each side of the question, both as to landlord and tenant. The other day he advertised for a farm, or a friend, and found that there was one to be let in Worcestershire. He wrote that he wanted the refusal of a farm fairly free from the curse of game. The parties wrote: "We believe the farm you refer to in Worcestershire is still open, although we are not authorised to offer the refusal of that or any other farm. As the owner may be in treaty with some one else, we cannot, of course say that by applying to him you can have it. In his letter to us he omits all mention about game; so that we cannot tell you, for certain, whether the tenant will have the game or not. He states, however, upon other matters, that, 'desiring to be upon the best of terms with all my tenantry, and of being united in religious and political views—namely, all of the Church of England and heartily Conservative—I would not willingly receive into the parish any person having decidedly different views or principles.' We understand that the landlord bears the reputation of being a 'good sort' of proprietor; but we were not advised in what respect he is entitled to that somewhat vague characteristic." These words showed that something required to be done on the question of landlord and tenant. There was justice and right on each side; and it only required consideration to enable the great majority of Englishmen to come to a right decision on the subject.

Mr. STANLEY LEIGHTON recognised in the fact of this discussion a desire for more careful conditions and more business-like agreements as to the cultivation of the land, the very means of promoting good relations between those interested in the soil. It was worthy of consideration how far those particular conditions which we found in taking houses could be applied to farming operations. In taking houses a careful inventory was made, and a clause that at the end of the tenancy there might be a claim for dilapidations; but when changes of farm tenancy occurred, it would be generally found that a great many of the repairs covered by such a clause fell upon the owner of the land. It would be a hardship if the owner should also have a claim against him for unexhausted improvements. It was true that the improver did not always receive the benefit of his improvements; and also that a man very often went away from a farm without paying for the damage he had done. There were differences of tenure and practice in different parts of England—it would be difficult to apply an absolute rule. The permanent improvements fell entirely on the landlords. To call upon a landlord to pay for things which he had not authorised, and would rather not see executed, was an unwise policy. He would rather see pressure put upon a landowner to sink his capital in making improvements than give authority to an occupier to sink money to any large amount in the hope of being recouped. No doubt some landowners had virtually placed themselves in the position of rent-receivers merely—those who were non-resident, absentees. A much larger responsibility rested upon them, and a much larger dominion over the soil ought to be accorded to the tenant. A real improvement ought to be paid for; but there were improvements, the outlay on which had been borne by the tenant, which, upon a change of tenancy, neither the incoming tenant nor the landlord might wish to have had executed. A claim for an improvement should be coupled with three conditions—first, the consent of the landlord; second, the fact that the improvements were unexhausted when the tenant left, the incoming tenant being willing to pay for those improvements and increased rent; and, third, that the outlay should have been altogether incurred

by the tenant. With such conditions, it appeared perfectly reasonable that there should be a compensation for unexhausted improvements. He disagreed with Mr. Evan Davies upon one point. They ought not to go to the Government or to the Legislature for what they could do themselves. He had little sympathy with those who, having matters in their own control, should ask the Government to interfere and overrule contracts which they independently made themselves. On the contrary, in a Chamber comprising the *élite* of Shropshire agriculturists, he felt that he should not offend them, men who were an acquisition to any neighbourhood, if he said that, having the command of all the best farms in the country, they might also command their own terms, as they were in such a majority that they held the monopoly of the market (applause).

Mr. EDWARD RAINFORTH, who had originally suggested the discussion of the subject, differed from Mr. Stanley Leighton on a few points. When land was drained it required to go through a course of high farming and high manuring, and the tenant could not do this unless he had compensation or a lease. There were plenty of soils in Shropshire and other counties which took as much as the fee-simple of the land to bring into cultivation. When a tenant drained and the landlord had the advantage of the Government loan, the agreement was one-sided; the men without large capital got into arrears of rent, and the landlords knocked them about which way they liked. The large farmers ought to press this question upon the Legislature; for it was the poor tenants, with large families, who could not take care of themselves. Unless there were a better understanding between landlords and tenants, and the tenants' property better protected than it ever had been, we should never have good farming in England. If a man expended £500 a year on manure and cake, he should have some compensation for that large expenditure, requisite to bring a farm into a high state of cultivation. In many places a tenant could not get even a piece of wood given him to repair the farm buildings, yet he might have a claim against him for dilapidations. It was the duty of the owner or his agent to ride over the farm and see that the buildings were properly surveyed and repaired every year.

Mr. JOHN BATHER had expected to hear a discussion on a system of compensation for unexhausted improvements; but he could not say that he had heard anything at all yet that would come up to his notion of such a system, nor, in fact, what were unexhausted improvements. There was an assumption that unexhausted improvements belonged to the tenant; and that, so belonging, they were a subject for compensation. He should like to have heard it proved, for it was the foundation; and if the foundation were shaky, any superstructure erected on it would fall to the ground. Errors bred by being suppressed and kept in the dark, like vermin in a corn-stack. The sooner they thrashed out the question the better; and they should all aid, taking sheaf by sheaf, dislodging the vermin, and seeing whether they could save any grain. In Shropshire they ought to consider the question of how the land was let, and not infringe the liberty of either landlord or tenant. Land in the county was let, too seldom, yet sometimes, by lease, also from year to year by written agreement; the tenant and landlord were contracting parties; and anything to fetter their liberty, either by the Legislature or anything else, they would do unwisely to bring about. A man should do the best he could. There were a number of bare tenancies from year to year without any written agreement. It was a maxim that no prudent man would invest his capital in any undertaking unless he had a reasonable security that he would receive back his capital, together with interest for his money and the care and pains he had had in employing it. Consider the pitiable case of a bare tenant from year to year without any written agreement: If he farmed well, he could not farm prudently; he must act upon probabilities, upon the temper and good feelings of his landlord—perhaps also upon the temper of the gamekeeper—and upon himself, for not being fixed to the place; notwithstanding all the improvements, if he could better himself he would go, so that in laying out the capital he had to consider not only the insecurity of the tenure from his landlord, but also his insecurity from his own feelings. A large portion of the county was farmed upon this miserable system. As to compensation, he had expected to have heard that if a tenant expended so much money on manure, or lime, or drainage, he should be repaid one-third or two-thirds—in fact, that they

would create a new system of property which would be a continual struggle between landlord and tenant, out-going and in-coming, for the in-coming tenant might be called upon to pay for ploughing that he called scratching, manure that he called dust and ashes, oilcake that he considered bran, and improvements that were very far from judicious. If they made compensation for unexhausted improvements they would only put the burden on their own shoulders. There was more readiness on the part of landlords to give leases than of tenants to take them. He would much rather have a tenancy from year to year under a landlord whom he could trust; it was better than a tenancy for a term of years, at the end of which the value might be readjusted and the rent raised. The question was: Had a tenant any claim to anything more than the return of his capital and reasonable interest? and if he got a return for his capital, what compensation ought he to receive for improvements in the land? This had not been shown yet, and he hoped to hear it before he left the room.

Mr. M. G. BENSON, as a landlord, had offered leases over and over again, and they had never been accepted. The moment they established a lease they had done with their landlords, and everything became a question between the lawyers, so that pleasurable meetings between landlords and tenants were done away with. He had spent £20,000 of his own money and the Government loan in drainage, yet did not get a halfpenny more rent than before; and although they might call him foolish, with one trifling exception he had not charged interest.

Mr. WELLINGS, a former tenant of Mr. Benson's, asserted that after certain improvements, and after he had paid Mr. Benson five per cent., he was turned out and called a bad farmer, although he "licked" every other farmer with turnips.

Mr. J. BOWEN JONES believed that fair agreements were the best, rather than leases; was strongly in favour of some system of compensation for unexhausted improvements, though he did not entirely approve Mr. Evan Davies's suggestion; and read a resolution in these terms: "That in order to promote a better system of agriculture in this country it is, in the opinion of this Chamber, necessary that the tenant farmers' capital used in the cultivation of the soil should be legally secured, with power to recover for all unexhausted improvements which shall not have been objected to by the landlord."

Mr. COOPER directed attention, at considerable length, to the leases of the Settled Estates Act, and to the Agricultural Fictitious Act (14th and 15th Victoria), giving a tenant power to remove fixtures.

The CHAIRMAN said in some counties a tenant had a complete right to compensation for unexhausted improvements. It was a question here how far the tenants ought to have a right enjoyed in other counties; and the further question was, whether he should have that right by custom or by Act of Parliament. Whether by custom or by Act of Parliament, discussion would pave the way for it. In the last 100 years custom in Shropshire had altered. Mr. More exhibited leases one hundred years old, of farms and cottages under his family, showing that leases were then the custom in Corvedale. Fifty years later the Rev. J. Plymley, grandfather of Colonel Corbett, the member for South Shropshire, drew up an agricultural survey of Shropshire, in which he said that leases were exploded by gentlemen of property, who, having previously granted them for very long terms, had been induced by injury sustained to abandon them. Mr. Plymley states that the tenant was, by the custom of the county, indemnified for the improvements in quitting his farm. This custom had changed fifty years later, as was shown by the evidence of Mr. W. P. Pinches, of Ticklerton, who, when president of the Wenlock Farmers' Club, gave important and highly interesting evidence on the state of agricultural customs in Shropshire, before a committee of the House of Commons, in 1845. Mr. Pinches then stated that no compensation was given in Shropshire to the outgoing tenant. He strongly advocated a system of tenant-right. This evidence was to the effect that agriculture had progressed in the county under the large proprietors, in whom tenants felt the fullest confidence, except sometimes in the matter of game; that two-fifths of the county was in a backward and unprogressive state, owing to the tenants having no leases, and not sufficient confidence in their landlords to justify them in expending capital. The result of the committee was,

that the views of the chairman "to render the principle of tenant-right for improvement general throughout England by giving it prospectively the validity of custom" were negatived, and resolutions of Mr. Bouverie were instead adopted. The first of these stated that the tenant-right denied did exist in several counties; that it extended to the crops the tenant sowed and left in the ground; to remuneration for the preparation of the soil for crops by tillage; for the straw, hay, and dung left on the farm, and for growing underwood; that this wider system of compensation was beneficial to agriculture, the landlord and the farmer; that it was desirable that no difficulties should stand in the way of the extension of such tenant-right; but that the committee did not recommend its being made compulsory. The question, the chairman said, before them now was whether they should try to spread the custom, or with Mr. Davies seek legislation to make what was recommended compulsory. The labours of this committee had borne fruit in two Bills, one alluded to by Mr. Cooper, by which a person with a limited interest in property could bind his successor with respect to agricultural improvements. Mr. Davies spoke strongly against views which were held with respect to tenant-right in Ireland, he yet advocated very liberal views of tenant-right in England. Mr. Bright's view of the Government advancing money to enable farmers to purchase land from landlords willing to sell, which Mr. Davies stigmatised as confiscation, was endorsed by Mr. Caird, the greatest agricultural authority, as peculiarly adapted for the state of Ireland; so that whether the idea deserved the ridicule it had received or not Mr. Davies and Mr. Caird were at issue as to its policy. With respect to absentee proprietors, if a man was a bad landlord, it is better that he should be an absentee; and if he was a good one, and only non-resident because he had property in too many counties to be able to reside in all, an occupancy under such a landlord was highly advantageous, as he could afford to spend more money on improvements than a poorer resident; and besides non-residence of a landlord may bring palpable advantages to tenants, as in the matter of game and shooting, the right which the Duke of Cleveland gave to his tenants. As to Mr. Bath's supposing that tenants put a halter round their necks if they paid an outgoing tenant for unexhausted improvements; this would answer far better than to take a farm which required three years to bring it into a good state of cultivation; and with respect to his saying that the tenants would be taken in by each other with regard to the work done, and bones and manure left, he thought the farmers entirely misrepresented by such a view being taken of their dealings with each other. Assuming them to be unanimous in favour of the claims of the tenant for compensation for unexhausted improvements, the question was, could this be obtained by the extension of the custom referred to as the Committee of the House of Commons proposed, or by legislation as Mr. Davies proposed.

The following resolution was agreed to:—"That in the opinion of this meeting it is necessary for the encouragement of a better system in the cultivation of the land that some legislative enactment should be obtained, giving to the tenant compensation for unexhausted improvements, in the case of buildings and drainage, the landlord's permission having been obtained."

BEFORE IN THE TOAST LIST.—At the dinner after the Broadwindsor Ploughing Match, last month, the first toast was "The Queen and the Royal family," the next "The Army and Navy," the third "The Bishop and Clergy," and the fourth "The Press." In giving this Captain Edwards, the Chairman, "anticipated that they would be rather surprised at the next toast. He hoped, however, that that surprise would be equalled by the satisfaction with which they would receive it. He had the pleasure of presiding over a meeting two or three days since, and then, as he had done for many years, lamented that the toast should be left almost to the end of the meeting. Ever since he had been enabled to make use of the little sense God had given him he had felt the influence of that great power which was worthy of their admiration and respect, and which, in his opinion, ought to take rank with the permanent institutions of the country—he referred to the Press. If there was one body of men more than any other indebted to the Press it was the agricultural body.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, Wednesday, December 8.—Present: the Duke of Devonshire, K.G., in the chair; the Earl of Powis, Viscount Bridport, Lord Chesham, Lord Kesteven, Lord Tredegar, Lord Vernon, Lord Walsingham, Sir Massey Lopes, Bart., M.P., Mr. Acland, M.P., Mr. Baldwin, Mr. Barnett, Mr. Barthropp, Mr. Booth, Mr. Bowly, Mr. Cantrell, Colonel Challoner, Mr. Druce, Mr. Brandreth Gibbs, Mr. Hassall, Mr. Holland, Mr. Hornsby, Mr. Hoskyns, M.P., Colonel Kingscote, M.P., Mr. Leeds, Mr. Milward, Mr. Pain, Mr. Randell, Mr. Ransome, Mr. Ridgen, Mr. Sanday, Mr. Thompson, Mr. Torr, Mr. Turner, Mr. Webb, Mr. Wells, M.P., Mr. Jacob Wilson, Professor Simonds, and Dr. Voelcker.

The Earl of Sefton, Croxteth, Liverpool; Arthur Allison, Filgate Forest Lodge, Crawley; and Charles F. Allison, Crawley, were elected Governors of the Society.

The following Members were elected:

Dutton, John, Curbridge, Farringdon, Berks
Fenton, Kirkby, Caldecote Hall, Nuneaton
Frankish, William, Limber Magna, Uleobey
Franklin, Joseph, Little Milton, Tetworth, Oxon
Mackinder, Harwood, Langton Grange, Spilaby
Wilson, John, Kettleby Thorpe, near Brigg
Spurr, Anthony, Dowlands, Lyme Regis, Dorset
Tinley, Edward, Southwell, Nottingham
Westhorp, Rev. Richard A., Berners Roding, Ongar, Essex
Whitworth, Henry, 96, King-street, Manchester.

FINANCES.—Major-General Viscount Bridport (chairman) presented the report, from which it appeared that the Secretary's receipts during the past month had been duly examined by the committee, and by Messrs. Quilter, Ball, and Co., the Society's accountants, and found correct. The balance in the hands of the bankers on Nov. 30 was £3,067 18s. 6d. The committee recommended that Mr. J. Gale's salary be increased £20 per annum, in consideration of his long and efficient services to the Society; that a list of members in arrear with their subscriptions be sent to each member of the Council, with a request that individually he will assist in obtaining payment of such arrears; and that a sum of £3,000 be placed on deposit with the Society's bankers.—This report was adopted.

JOURNAL.—Mr. Thompson (chairman) reported the decision of the judges of the essays competing for the prize of £25, offered for an essay on any agricultural subject, awarding it to one on the Potato in Jersey, bearing the motto, "Practical." The motto-paper having been opened by the President, the essay was declared to have been written by Mr. C. P. Le Cornu, of Trinity Manor, Jersey. With reference to the prize of a piece of plate, of the value of 100 gs., offered by Mr. Mason to the occupier of the best managed farm within a certain area round Oxford, the committee made the following recommendations:—(1). That an entrance-fee of £2 be required from candidates who are members of the Royal Agricultural Society, and of £3 from all other competitors; (2). That the competition be confined to tenant-farmers; (3). That no farm be allowed to compete which does not contain at least 200 acres; (4). That a second prize of £50 be awarded to the 2nd best farm; (5). That no entry be received later than Saturday, February 26; and (6) that the certificate of entry shall contain the name and address of the candidate and of the proprietor of the farm, the kind of soil (light or heavy), the acreage of the farm, and

its distance and bearing from the nearest town.—This report was adopted.

CHEMICAL.—Mr. Wells (chairman) presented the report of the committee, which contained the annual report of the consulting chemist. This report was referred back to the committee for the purpose of enabling them to select certain portions of it for publication in the agricultural newspapers.

VETERINARY.—Lord Bridport (Chairman) having presented the usual annual report, Mr. Jacob Wilson drew the attention of the Council to the question of the equivalent which the Society obtained for the annual grant of £200 to the Royal Veterinary College. After a conversation, it was resolved (with two dissentients) that the Veterinary Committee, after conferring with the governing body of the Royal Veterinary College, be requested to make a special report to the Council, on the suggestion made by Mr. Jacob Wilson, that a portion of the grant of £200 be in future placed at the disposal of the Veterinary Committee, to obtain reports on special subjects of interest connected with veterinary science—the committee to report to the Council at their meeting in March.

SHOWYARD CONTRACTS.—Mr. Randell (Chairman) reported that the plan of the showyard for 1870 had been placed in the hands of the Local Committee at Oxford, to enable them to proceed with the levelling required, which is now in progress; and that the arrangements for the railway siding, and for the supply of water to the ground, had been satisfactorily determined. This report was adopted.

SELECTION.—Mr. Thompson (Chairman) reported that the Committee had completed the revision of the bye-laws, but desired to take the instructions of the Council as to certain points. They also recommended that a copy of the new edition of the charter, bye-laws, and resolutions of Council be sent to each member of the Council, and to all future members of the Society on their election; and that the same be printed in the next number of the *Journal*, and circulated amongst the present members of the Society. It was also recommended that the annual report of each standing committee shall contain a list of its members, omitting those who have absented themselves during the whole year, and that it shall contain the names of those proposed to be added to the list for the ensuing year. The questions relating to the bye-laws having been disposed of, and the other recommendations of the Committee adopted, the Chairman stated that the Committee had agreed to recommend Mr. Charles Whitehead, of Barming House, Maidstone, to fill the vacancy in the Council caused by the election of his Grace the Duke of Devonshire, K.G., as a Vice-President. Mr. Wells, M.P., having proposed, and Mr. Randell seconded the nomination of Mr. Whitehead, an amendment, substituting the name of Mr. R. Russell, of Farningham, was moved by Mr. Cantrell, and seconded by Mr. Ridgen. On a show of hands, the amendment was lost by one vote, the numbers being for Mr. Russell 11, and for Mr. Whitehead 12.

The Secretary was instructed to communicate with the local authorities at Chester, Shrewsbury, Stafford, and Wolverhampton, informing them that the Society's country meeting in the year 1871 will be held in the district including Cheshire, Shropshire, Staffordshire, and North Wales.

Mr. Sanday, having given notice that he would move

"that the rule for the non-payment of judges who are members of the Council be rescinded," stated that as no such rule could be found, his resolution was unnecessary. It was therefore moved by Mr. Milward, and seconded by Mr. Thompson, "that Mr. Sanday and Mr. Bowly be paid for their services at Manchester;" whereupon, under clause 36 of the bye-laws, Lord Bridport requested that the consideration of the question be deferred until the next monthly Council. On a show of hands the question being deferred, Lord Vernon gave notice that at the next monthly Council he should move "That judges who are members of Council may be paid for services rendered to the Society."

The Earl of Lichfield gave notice that at the next monthly Council he will call the attention of the Council to the inconvenience arising out of the conditions of the charter fixing the date and place of holding the general meeting, and excluding from the Society's meetings the discussion of all subjects having reference to measures pending, or to be brought forward in either House of Parliament.

The standing committees for the year 1870 were appointed.

The report of the Council to the half-yearly general meeting was prepared.

A letter from Mr. W. A. Gibbs on the harvesting of hay and corn in wet seasons was referred to the Implement Committee.

The Council having given the usual leave of absence to the secretary and clerks, adjourned over the Christmas vacation.

At a special Council, which met, by order of the President, at the rising of the monthly Council, the stock and implement prize-sheets for the Oxford meeting were arranged, certain prizes for Dorset sheep having been added to the draft of the former, on the motion of Lord Bridport.

The annual meeting of this Society was held at noon, on the Thursday, in Hanover-square; the President, His Grace the Duke of Devonshire, in the chair. The attendance was somewhat above the average.

The SECRETARY (Mr. H. M. Jenkins) read the following

REPORT OF THE COUNCIL.

Since the last General Meeting in May, 2 Governors and 32 Members have died, and 4 Governors and 182 Members have been elected, so that the Society now consists of

75 Life Governors,
75 Annual Governors,
1,469 Life Members,
3,962 Annual Members,
16 Honorary Members,

making a total of 5,597, and showing an increase of 86 for the year 1869.

The half-yearly statement of accounts to the 30th of June, 1869, has been examined and approved by the auditors and accountants of the Society, and has been furnished to all members in the last number of the *Journal*. Owing to the great financial success of the Manchester meeting, the funded capital of the Society has been raised to the sum of £20,000 Stock in the New Three per Cents., while an additional sum of £4,612 7s. 8d. New Three per Cents. has been invested as a Reserve Show Fund. The Council regret that owing to the continued difficulty experienced in collecting arrears of subscription, they have been compelled to take legal proceedings against some members of the Society; but they have obtained the only satisfaction possible under such circumstances; the arrears have been paid, and the legality of the Society's claims has been most clearly established.

Under the Presidency of H.R.H. the Prince of Wales, the Manchester meeting attained an unusual degree of success. Their Royal Highnesses the Prince and Princess of Wales honoured the Exhibition with their presence on two occasions. The expectations of the Council as to the magnitude of the meeting

were even surpassed by the result. The entries of implement largely exceeded those at any previous meeting of the Society, and the exhibition of stock was on a still more extended scale. The crowd of members and visitors more than doubled in number those who were admitted to the Show-yard at Leicester, and the amount received for admission was proportionately large. The interest created by the magnificent exhibition of live stock and implements may be estimated by the fact that more than a thousand pounds was realized by the sale of catalogues.

The Local Committee carried out the various arrangements which had been entrusted to them with remarkable zeal and liberality; and their secretary (Mr. Whitworth) in particular was untiring in his exertions to promote the success of the meeting. Considering that during the six days of the show it was visited by more than two hundred thousand people, the Council believe that no slight praise is due to the arrangements by which so large a number of persons could obtain excellent refreshments without inconvenience, and at a moderate price—the more so as these arrangements were made by Mr. Whitworth with the advantage of a considerable profit to the Society. Mr. Whitworth's indefatigable efforts on behalf of the Society induced the Council to request his acceptance of the sum of one hundred and fifty guineas as an acknowledgment of his services.

The great agricultural feature of the meeting was, no doubt, the careful and prolonged trials of reaping and mowing machines; and, whether tested by the interest exhibited in them each day by crowds of intelligent spectators, or by the great increase in the extent to which reapers were reported to have been used during the following harvest, there can remain no question that the Society's trials of implements at Manchester have already yielded good results.

On the two Sundays during which the stock was in the yard, Divine Service was performed by the Vicar of Stretford, before large and attentive congregations, chiefly composed of the servants in attendance on the animals.

The Council have fixed the commencement of the Oxford meeting for Monday, the 18th of July. They have decided that the live stock shall all be in the yard by four o'clock in the afternoon of Saturday, the 18th day of July, which will allow of the animals recovering from the fatigue of the journey to the show (and thus place those which have travelled from distant counties more on an equality with others which have come only a short distance), before the judges commence their inspection on the Monday morning following. The show will close on Friday, the 22nd of July, at four o'clock, thus enabling most of the stock to commence their homeward journey the same evening, and to arrive at their destination before the following Sunday morning.

In addition to the usual classes contained in the stock prize-sheet, the Council have offered for competition at Oxford prizes for Norfolk and Suffolk polled cattle, for Dorset sheep, and for Lincoln as distinguished from other long-woolled sheep. The Oxfordshire Agricultural Society has offered special prizes for pairs of dairy cows, for Oxfordshire Down sheep, and for hackneys; and the Local Committee have offered prizes for a class of four-year-old, and for another of older hunters.

The High-Sheriff for Oxfordshire (James Mason, Esq.) has offered a piece of plate of the value of 100 guineas, as a prize for the best-managed farm in the district included within a line drawn through the towns of Reading, Great Marlow, Aylesbury, Buckingham, Banbury, Stow-on-the-Wold, Lechlade, Wantage, and back to Reading. The Council have agreed to fix the conditions of competition; to appoint, and to defray the expenses of the Judges and a reporter; and to arrange all other details. They have determined that an entrance-fee of £2 be required from competitors who are members of the Society, and £3 from all others; that the competition be confined to tenant-farmers; that no farm shall be entered which does not contain 200 acres; that a second prize of £50 be given to the occupier of the second-best farm; that no entry be received later than Saturday, the 26th February; and that every certificate of entry shall contain the name and address of the candidate, and of the proprietor of the farm, the kind of soil (light or heavy), the acreage of the farm, and its distance and bearing from the nearest town.

The schedule of prizes for implements and machinery to be awarded at Oxford contains classes for fixed steam-engines, horse-gears, mills, crushers, chaff-cutters, oilcake-breakers,

tarnip-cutters, steaming-apparatus, dairy implements, bone mills, guano breakers, coprolite mills, flax-breaking machines, tile machinery, and draining tools.

The continually increasing number of implements exhibited at the country meetings of the Society has compelled the Council to consider by what method a sufficient number of Judges in each department could be appointed beforehand, and also by what means a large portion of the time of the Judges, hitherto devoted to a preliminary examination, and a selection of implements for trial, could be advantageously economized. The Council have therefore resolved that every implement intended by the exhibitor for competition shall be entered in its respective section and class *for trial*, at the time when the specification is sent in to the Secretary; but, notwithstanding such entry, the discretion of trial will rest with the Judges; also, that no exhibitor may enter more than one implement of the same construction for competition in any one class. Further, in order to protect the interests of purchasers, it has been resolved that, although certain implements belonging to the classes for which prizes are offered are not entered for trial, the Stewards may, on the recommendation of the Judges, order any of them to be tried, and their capabilities made public.

The attention of the Council having been drawn to the increasing adulteration of manures and feeding cakes, especially guano, nitrate of soda, ground bones, and linseed cakes, Dr. Voelcker has been requested to submit to the Monthly Council in March, June, and December, a report of the various samples forwarded to him by Members of the Society, so that such report, together with the names of the dealers who supplied the substances analysed, shall, if the Council think fit, be published in the *Agricultural Journals*.

The Society's Educational examinations in April last were conducted on the same plan as those of the previous year, and the results were so satisfactory that the Council have renewed the grant (£200) for the year 1870, with this alteration, however, viz., that whereas, hitherto, it has been considered advisable not to fix any limit to the ages of candidates, in order that *all* comers might be admitted during the earlier stages of our proceedings, it has now been thought advisable to fix a maximum of age for candidates; no one who has passed his 21st birthday before March 31st, can in 1870 be admitted as a candidate for the Society's honours and prizes.

By order of the Council,

H. M. JENKINS, Secretary.

Lord DENMAN, in moving the adoption of the Report, said he considered it highly satisfactory. The Exhibition at Manchester was, as they all knew, a very successful one, and every effort should be made to render the Meeting at Oxford in July next equally successful. In his own neighbourhood a disease had prevailed among cattle which seemed to be quite incurable—he meant black-foot, or speed; and he thought that if a prize were offered for the best essay on that subject, it would produce good results. Great exertions would be required to make the Meeting next year anything like equal to that which was held in a populous and enterprising town like Manchester, and presided over by the illustrious Prince who was heir to the throne.

Mr. CALDWELL in seconding the resolution said: As regarded the prize of 100 guineas offered for the best managed farm in the Oxfordshire district, he said he thought it would not be enough to state the acreage of the farm, distinguishing between light and heavy, but it should also be stated what number of acres was in grass and what number in arable (Hear, hear). They all knew that a good dairy farmer might not be a good arable farmer, or a good arable farmer a good dairy farmer (Hear, hear). With respect to the miscellaneous articles exhibited, it would, in his opinion, be an advantage to the society, besides tending to lighten the labours of the judges, of whom he had for some time been one, if those who exhibited were required to send in a good description of their articles, and if some attempt were made by the Council to define what miscellaneous articles could be considered useful to agriculturists.

Mr. C. S. READ, M.P., said he wished very much that the report just presented had contained some reference to the Society's *Journal*. He would take that opportunity to express his sense of the marked improvement exhibited in the last number of the *Journal*, which he considered more practical and useful than any number that had been issued for a great

many years (cheers). He hoped that the inspection of the farms of leading agriculturists would be continued, and that they would have many reviews of such farms in future numbers of the *Journal*. He could not help remarking how singularly opportune was the account of the Castle-acre Farm, which appeared in the last number of the *Journal*, when Mr. Hudson, who was so long a member of that society, had just passed away before it was printed. He considered that review most important, because it showed what could be done by the application of capital to bad or inferior land. If it were a permanent duty on the part of the British farmer to supply meat and corn and wool for the nation, no man had carried out that duty so successfully as Mr. Hudson (Hear, hear). Whether such expenditure upon high farming paid was a question which had yet to be determined, and he must say that he considered "unprofitable" and "impossible" synonymous terms in the agricultural dictionary (Hear, hear). If he might offer one criticism upon what comprised so much that was valuable, he might observe that when a gentleman was preparing, in the dull season of spring, to write a review, and to mention the wages of agricultural labourers, he should inquire what were the average wages of the labourers, instead of what were the wages paid at that particular period of the year (Hear, hear). The wages paid at Castle-acre were, he believed, put down at 11s. a week. The fact that Mr. Hudson expended £2,000 a year in wages for 800 acres of land showed that he was a good employer of labour. For two or three months in the year his men earned at task-work as much as half-a-crown a day; while at harvest time the wages amounted in some cases to £2 a week, and were never less than 30s. One word as to the future *Journal*. He expected and hoped that it would be issued as early as possible. He looked forward with a great deal of pleasurable anticipation to the report on Belgian farming, not merely, he might observe, on account of its agricultural, but also on account of its political bearing (cheers).

Mr. NEILD said, as one who was not the most inactive member of the Local Committee for the Manchester Meeting, he wished to acknowledge, on its behalf, the very handsome manner in which its exertions, and especially those of its secretary, Mr. Whitworth, were alluded to in the report. Before that meeting was held he ventured to predict that it would prove a memorable one in the Society's history, and he thought that prediction had been completely verified (cheers). He wished to remark that he thought a very large saving might be effected in the fittings of the show-yard (Hear, hear). The present arrangements precluded, he believed, the immediate accomplishment of that object; but, as the matter stood, it was not one which redounded to the credit of the managing body. As regarded the number of members, although it now approached 6,000, it very inadequately represented what should be the number of members of the Royal Agricultural Society of England. Considering the national character of that Society he thought every farmer occupying 100 acres of land should feel it his duty and his interest to belong to it. For two or three years he had advocated, both in public and in private, a drawing together of that society and the leading country societies of Great Britain. The Council had indeed taken a step in the right direction by dividing England into five districts; but that did not reach what they in the country thought was wanted. He believed that if a deputed member of the leading agricultural societies of England were a member of the Council for a year, that arrangement would work beneficially for the agricultural body at large (Hear, hear). He thought that in the present day they should look with rather conservative eyes at the progressive character of the times in which they lived. He would be one of the last to oppose or check the action of a number of territorial noblemen and gentlemen who had been so useful on the Council of that society; but he believed they had nothing to fear from having a larger infusion among them of practical tenant farmers; on the contrary, he was convinced that the more the noblemen and gentry of England were brought side-by-side with practical, sensible tenant farmers the better would it be for that great society and for all connected with agriculture. He entirely concurred in what Mr. Read had said in praise of the *Journal*. It was now a pleasure to read it, and in Lancashire and Cheshire they looked upon it as a charming book (cheers and laughter). He recollected that last year some

rather crooked work was thought to have been going on about Mr. Jenkins's appointment; but the discussion which took place did him good, it put the spur into him and he came out a winner. When the little man came down to Manchester he did well for the Society, and he believed the Society never had a better secretary (cheers). In conclusion Mr. Neild condemned the stewards and judges being required to pay their own expenses as a niggardly arrangement, unworthy of such a society.

Mr. BOTLEY said, having expressed a hope at Leicester that the *Journal* would be more popularized, he was glad to be able to concur in the remarks just made on that subject by Mr. Read. The encouragement given by the Society to education had his entire approval, and he thought its funds could not be better applied. He deprecated the increase of the investment in the funds.

Mr. T. WILLSON thought that as regards the prize for the best farm in the Oxfordshire district it would have been best to have allowed everyone to compete, instead of charging an entrance fee of £2 for members and £3 for all others. The High Sheriff of Oxfordshire could not have intended that the sphere of competition should be thus limited. He wished to know whether the Council intended to allow an exhibition at Oxford outside the showyard as was the case at Manchester. Several gentlemen had declared their determination to withdraw from the Society if that were repeated. Two or three of them wanted to see the horses shown at Leicester. Having paid their shilling they found that they could not see them unless they submitted to be mulcted to the extent of 4s. more, and after all they did not see them at all, because they did not happen to have any change in their pocket (laughter). They considered it a disgrace to the Society that such a thing as that should be allowed in order to compensate or please the local committee. If a horse exhibition was to be held outside the show-yard, why should there not be a menagerie, a penny gaff, or an Aunt Sally? (laughter). It seemed to him quite beneath the dignity of such a society as that. In conclusion he would inquire why that meeting was held on Thursday instead of on Wednesday? (Hear, hear).

Dr. CRISP thought it was a great evil for a society like that to go on in the old humdrum style, and assume that all that was done was right. As regarded the *Journal*, he had to complain of the absence of any report or summary of foreign agricultural matters; and he held that it would be a great improvement if the Editor would let them know what was going on in other countries. With respect to veterinary science, no good could be done so long as that society continued to pay £200 a year to the Veterinary College. The whole system was rotten to the core, and he thought the Society should advise the Government to establish one on a sound and extensive basis.

Mr. THOMPSON said he would commence the few remarks which he had to make by expressing his own great satisfaction, as a member of the Council, at the general tone that pervaded the meeting, and the practical and useful character of the suggestions made for the consideration of the Council. Twelve months ago he felt it his duty, as Chairman of the *Journal* Committee, to defend the appointment of Mr. Jenkins against what might be considered a very heavy attack (laughter). He had to bear the brunt of that attack, and it was very gratifying to him to find, after the lapse of twelve months, that Mr. Jenkins had not only justified his appointment and taken the place of an average editor, but by almost unanimous consent was adjudged to show that progress which they all wished to see in the Society. Lord Deunam had referred to a disease among cattle from which he (Mr. Thompson), among others, had suffered considerably. He would mention a cure which he had found very effectual, and that was setoning, beginning to seton very early, when the calf was about six months old, and keeping it up for the first three years. Before he had recourse to that he suffered great losses among his calves. Those in his neighbourhood who had adopted setoning had, like himself, never had a case of the disease, while those who had not done so had had such a number of cases that they had been induced to turn their attention to it.

Mr. NEILD: You mean setoning combined with good living. Mr. THOMPSON continued: Of course calves in good condition were less liable to disease than calves which were out-of-condition; but setoning did not keep down the condition of calves to the extent that might be supposed. He did not agree with Mr. Caldwell, that the miscellaneous articles exhibited at

the Show should be restricted to articles which were directly connected with agriculture. There were a great many miscellaneous articles which were interesting to a large number of visitors, and there was a large space to be filled; he saw no reason why a portion of it should not be occupied by articles which clearly tended to increase the receipts. He knew that entailed very onerous duties on the judges, but it was necessary for the good of the Society. Mr. Botley having alluded to the £20,000 invested in the Funds, he must say he considered it a great advantage to the Society to have such an investment, in order that the Society having got into a certain groove might be able to continue it and keep up its prizes. In consequence of there being no Show during the cattle plague and of the deficiency in the receipts at Bury, the reserve fund was reduced by some thousands of pounds, and it was a great advantage that in spite of drawbacks like these the Society was enabled to conduct its operations on a uniform scale. The object of the Council had been not to make large investments, but to accumulate such an amount as would suffice to meet standing expenses, so that the whole amount received at the shows might be available for prizes. As to Mr. Willson's question why that meeting was held on Thursday, he wished to say that if the convenience of members would be best consulted by holding it in future on Wednesday the Council would hold it on that day. The attendance on that occasion was rather in favour of Thursday; but it was chiefly in consequence of the meetings of the Farmers' Club, the Smithfield Club, and the Chamber of Agriculture being held previously that the meeting had been fixed for that day.

Dr. CRISP said the practice of setoning recommended by Mr. Thompson appeared to him so cruel and unnecessary as to be a fit subject for the consideration of the Society for the Prevention of Cruelty to Animals (laughter).

Mr. COLEMAN would suggest that in order to facilitate field trials the Council should send a competent person beforehand, to make, perhaps in conjunction with one of the stewards, the necessary arrangements; considerable delay having occurred before for want of such preparation.

Mr. TORR said Mr. Willson seemed to him to have fallen into an error with regard to the horses shown at Manchester. The jumping of the horses was, in fact, the result of a private arrangement on the part of the Manchester people, who took the shilling for it, and he believed realised a profit of three or four thousand pounds. If Mr. Willson's friends had waited half an hour they would no doubt have seen the animals back in their stalls in the show-yard. The feeling of the Council was decidedly against the jumping, but their Manchester friends made it a *sine qua non*, and it was assented to on the condition that the animals should return to the yard. Like previous speakers he congratulated the meeting on their having such a Secretary.

Mr. T. DUCKHAM thought that the members of the Society had a right to see everything that was entered in the catalogue during the hours that the exhibition was open; instead of which they were caught as it were in a trap so far as the horses were concerned, and found that to see them they must pay 5s. That appeared to him to be a lowering of the standard of the Society, and he hoped that the Council would not be dictated to again by a local committee.

Lord VERNON said a member of the Manchester Local Committee having observed that great economy might be effected in the fittings of the show-yard, he wished to remark as a member of the contract committee that if anything were pointed out as worthy of consideration it would receive attention (Hear, hear).

Mr. JACOB WILSON said: Mr. Duckham seemed to him to be labouring under a great mistake. That gentleman doubtless went to Manchester, as others did, to see the Show. He bought a catalogue at the door, paid his entrance-fee or presented his ticket, and saw everything in the yard that was entered in the catalogue. The jumping was quite distinct from the rest, and the horses entered for it were previously exhibited in the show-yard. It was not compulsory on Mr. Duckham, or anyone else, to pay an additional four shillings.

Mr. JONATHAN GREY said: As an old member of the Royal Agricultural Society, he would ask whether the horses that jumped compete for the prizes of that Society. If they did, it was, he maintained, beneath the dignity of the Society to allow them to go out of the yard for that purpose (Hear).

Mr. NEILD must say that some gentlemen seemed to him to be treating Manchester rather unfairly. The local committee drew a hard and fast line, and a pledge was given that every horse that went out to jump should be brought back. It was left to the pleasure of the owner whether an animal should go out of the yard or not.

Mr. DUCKHAM: That should not have been the case.

Mr. NEILD said that was a matter of opinion. The result, as regarded the local committee, was that it was sadly out of pocket. The banquet cost them £1,200, and notwithstanding the character given to Manchester for grasping and greed ("No, no"), he believed the Society never went into a district where the members were treated more handsomely (cheers). He was really sorry to hear such narrow views as had been expressed by some gentlemen.

Mr. CALDWELL would like to know under what rule the horses were allowed to jump.

Mr. THOMPSON referred to a paragraph on the back of the Manchester sheep catalogue, stating that there would be an exhibition of horses for leaping, prizes being offered by the local committee, in an adjoining Showyard. It was, he added, clear that the arrangements were made with the cognizance and consent of those who had the management of the Show. He hoped that discussion would not be continued any longer. Where there was much cause for mutual congratulation they should not allow a little difference of opinion to divide them (Hear, hear).

Sir WALTER STIRLING also deprecated any misunderstanding. The meeting at Manchester was, he remarked, a happy union of agriculture and commerce, which must have delighted the well-wishers of both, and which was managed on the part of Manchester in a spirit worthy of the Metropolis of the North (cheers).

The report was then adopted.

Mr. T. ASKELL, in moving a vote of thanks to the auditors, reverting to the subject of the prize for the best-managed farm in the Oxfordshire district, said he thought the competitors should be required to make a declaration that they had not cultivated their farms at a loss (laughter).

Mr. BADHAM seconded the motion, which was then put and carried.

On the motion of Mr. TORR, seconded by Mr. Neild the auditors were re-elected.

The business having thus been concluded,

The CHAIRMAN inquired, in accordance with custom on such occasions, whether any member present had any question to ask or any suggestion to offer for the consideration of the Council.

Mr. T. WILLSON having expressed a wish to know when the existing contract for the fittings of the show-yard would terminate,

Mr. TORR replied: In about two years, adding that it had led to a saving of about £1,000 a-year, as compared with the preceding contract.

Mr. DUCKHAM moved a vote of thanks to the noble duke in the chair.

Mr. C. S. READ, M.P., in seconding the motion, adverted to the appointment of secretary. He was, he said, one of those who last year ventured to criticise that appointment; but at the same time he said that he thought the Council had selected the very best man that they possibly could select. All he did was to criticise the mode of that appointment, which, he believed, was somewhat irregular.

Mr. THOMPSON would be glad if Mr. Read would point out in what respect it was irregular?

Mr. READ said: The committee having made their report, the Council were asked to select in about one minute. He thought that was treating the members of the Council as mere puppets.

Mr. THOMPSON begged entirely to deny that. The question was submitted to the Council in a regular manner, after full notice, and every member had an opportunity of opposing what was proposed.

The motion of thanks to the Chairman having been carried by acclamation,

HIS GRACE in acknowledging it said: It had afforded him great pleasure to listen to such an interesting discussion, and to meet with such a favourable reception from the members present.

The meeting then separated.

THE SMITHFIELD CLUB SHOW.

THE OPENING MORNING.

The most popular prize ever offered by the Royal Agricultural Society of England has no doubt been the £100 for the best horse; and the £100 for the best beast will as certainly be the most attractive feature of the Smithfield Club. For many years past the London Cattle Show has been considerably over-weighted by the Birmingham meeting, where the best animal could always win a deal more money than he could at Islington. This, however, will be no longer the case. Accumulating every possible prize he could, the total of Lord Aylesford's successes at Birmingham with his Shorthorn steer amounted to about £120; whereas, as the best of all in London, he will make up a purse of some £170. This is as it should be; and the national show would threaten no longer to be so much of a second-hand business as it latterly has been. As the offer comes more to develop, many of the best animals will probably be kept back, with a view to "the Club hundred," rather than having their bloom taken off at meetings immediately preceding the great week in London.

A combination of circumstances has told somewhat against the inauguration of this handsome premium. In the first place it was not known soon enough to ensure any especial preparation or demonstration over its award; while the uncertainty engendered by disease floating about has tendered to lessen the opportunity or encouragement

to "ripen" any very crack animals. It has thus happened that the first 100 gs. winner is by no means the best beast ever seen at the Smithfield Show. Indeed, our first run through the entries, tends in every way to confirm this impression. Nevertheless, nearly all the champion animals of the year were to be found in the Agricultural Hall: Lord Aylesford's Shorthorn steer, the best of all at Birmingham; Mr. Roland Wood's Shorthorn steer, the best of all at Oakham; Sir Walter Trevelyan's Shorthorn cow, the best of all the cows and heifers at Birmingham; Mr. Outhwaite's Shorthorn ox, the best of all the Shorthorns at Leeds; Mr. Bettridge's Hereford, the best of all the beasts at Abingdon, and Mr. Farthing's and Mr. Heath's oxen, the best of the Devon and Hereford breeds at Birmingham. In truth, wherever it well could be, the return-list of the Smithfield Club Show is more an echo of the Midlands' than might have been anticipated; for the Council have so contrived that in every section, save the Pigs, the Judges in Birmingham are represented in London. Thus, in Shorthorns we have again Mr. Sanday; in Herefords and Devons Mr. Kearey; in Southdowns and shortwools Mr. Legar, and in longwools Mr. Clarke, of Scopwicks; while of course Messrs. Sanday and Kearey take their share of duty over the other breeds and crosses. Nothing can be more impolitic than this, and murmurs grew louder and louder during the morning as the awards still went the same way. Mr. Parrington, at the best managed meeting we have,

makes it an indispensable condition that any judge who accepts office at the Yorkshire in August should not have acted at the Royal Society's Show in July; and the Smithfield Club must do the same by Birmingham.

It is not our purpose here to repeat ourselves. We give a full report of the Birmingham exhibition; while a valued correspondent, himself a breeder and a frequent judge, has favoured us with a very lengthy account of the Leeds celebrities; so that the merits of the several competitors may be easily gathered. The Show altogether, more especially of cattle and pigs, is very moderate; and the many puffs put about as to this being numerically larger than ever is simply untrue. The Devons and Shorthorns, however, make up two very creditable lots; the Sussex and Highlanders are also good; the Polled Scots and Herefords inferior; and the Crosses noticeable for some very good beasts.

In a medium class of Devon steers Mr. Hambro's clever beast is again first, while a fresh entry by Mr. McNiven drives Mr. Nixey's second at Birmingham back to the third place. In the old class of Oxen or Steers Mr. Farthing's ox is again first, but a good animal of Mr. Farquharson's beat Mr. Burton's, now third instead of second. The places of the first and second heifers were reversed in favour of Mr. Nixey *vice* Mr. Farthing; but Mr. Farthing's best cow at Birmingham was also best here; and the next two were put about without any just cause as it would so seem for the correction, as we altogether prefer Mr. Hitchcock's entry. In the class of youngest steers Mr. Buller won with a very well-bred one; and the companion display of Shorthorn steers, Her Majesty's, was pronounced to have the pick in a plain, gaudy youngster at best; but Mr. Stilgoe's second was still worse, and the class altogether a bad one. The Birmingham hero was again the first of his class, with Mr. Roland Wood's red steer again second to him, and Lord Penrhyn third, but a long way off the other two in merit. In no division did the first prize so fairly place himself as in that of Shorthorn Oxen, as Mr. Outhwaite's beast was ordered in long before the Judges had done with the others, as it was palpable thus early how superior he was, as many thus early proclaimed him the 100^gs. winner. This was the best of all the Shorthorns at Leeds, as he no question should have been the best of all; but greatly to Mr. Knowles' disgust, the other two Judges, who judged like butchers, gave Mr. McPherson's cross-bred the highest honour they had to bestow. The Marquis of Exeter was put second with a fair ox of some style, that has already been about, as has Colonel Lindsay's third—the best of his class at Birmingham, and as middling an animal as ever took a prize at a national show. Nevertheless the judges appended a couple of commendations to their award. The first and second Shorthorn heifers were first and second at Birmingham; the first and second Shorthorn cows were first and second at Birmingham, and the third there was fourth here, a fresh cow of the Duke of Devonshire's dividing her from her companions.

There were some very good Sussex steers, although the foot-and-mouth disease had kept two or three at home, and a famous Sussex cow from the Messrs. Heasman's herd, that took first prize as a yearling at the Battersea Grand National. There were in all half-a-dozen entries of Norfolk and Suffolk Polled, and they must show better to deserve their distinctive rank at The Royal. There were four Long-horns, three or four Scotch no-horns, with no Mr. McCombie amongst them; two or three Irish, and two or three Welsh beasts. The Highlanders were better with two fresh names on the prize list and Birmingham beaten. Mr. Martin's cross, that ran the Shorthorn so closely in the Midlands,

was encountered here by a very kindly-looking "nick" exhibited by Mr. Heath Harris, with a good Shorthorn head and great broad back, but not altogether the wonder his friends made him out to be. The Herefords attracted very little attention, and in the youngest class there were only two entries; while Mr. Price and Mr. Heath had again the honours of the other two classes; with Mr. Bettridge, however, twice put out for second by Lord Darnley. The positions of the two best Hereford heifers in the Midlands were now reversed, and the Hereford cows we never saw out.

Amongst the Sheep, Lord Berners' Leicesters, Sir John Rolt's Cotswolds, Mr. Byron's Lincolns, Mr. Rogers's Oxfords, and Lord Walsingham's Southdowns still tell out the old old story, for they were all firsts, last week, although of course not always with the same sheep. In the yearlings, for instance, the Merton Downs weighed two stone a sheep more than the little beauties at Birmingham, but, big or little, they had it all their own way. There was no very great entry of Shropshires, but the supporters of the Hampshire Downs seem to be coming out in more force at these meetings; and Mr. Overman sent some of his best crosses.

Mr. Foljambe, with an eye to the £100 Plate, entered his white steer amongst the Extra Stock, where Mr. Willis' famous old cow was also nominated, but was not sent. With more courage the Argentine Government sent a beast "supposed to be descended from the Spanish," that had as many faults as it is about possible for any animal to possess. Harsh, ungainly, and coarse, if this be the stuff they are about to make potted beef of, the better for the very poor who cannot afford to purchase such a luxury.

DURING THE WEEK.

A more deliberate examination of the classes only tends to confirm the opinion we have already expressed as to the moderate character of the meeting, more especially as regards cattle and pigs; while, as we said of Birmingham, after first trying the strength of the year, we doubt much if there be really a Gold Medal animal out, as the best of all can be no more than the best of a bad lot. Indeed, so evenly indifferent were the entries that another set of judges might reasonably enough, as we thought, have reversed many of the decisions. But there was not another set of judges, as almost everywhere the experience of the previous week was brought to bear, with an influence that, of course, might have been expected, and thus Ilington became more than ever a mere echo of Birmingham. The Devon and Hereford man did not certainly hold quite so strongly to his line here, but then he appeared to have no great weight in the Midlands; whereas the Shorthorn awards followed as faithfully as it was possible one show on the other. It is satisfactory, however, to hear that this duplicate system will no longer be sanctioned by the Smithfield Club, as surely they might change about a little even in Birmingham from Messrs. Sanday and Kearey.

It is not our intention to go again very minutely over the merits of animals, with which, from our own and our own correspondents' reports, the reader must be by this time tolerably familiar. As we stated last week, the Devons and Shorthorns made-up to very creditable lots, the Sussex and Highlanders are good, the Polled Scots and Herefords inferior, and the Long-horns, the Suffolks, the Welsh and Irish so short of entries as to command little attention. In the older class of Crosses there were, no doubt, more good beasts than we had allowed for, from a first look, and a general commendation was very honestly deserved. In fact, here centred the strength of the show, and could the opinions of breeders and feeders, of other judges, of salesmen and butchers have

been polled, there can be no doubt but that the first £100 would have gone by a very large majority to a cross-bred ox. Writing of the Birmingham Meeting we said "the only really formidable opponent to Lord Aylesford's steer turned up in Messrs. Martin's Aberdeen cross. This was a great square upstanding animal, of more size rather than majestic appearance; far better forward than the Shorthorn, and at his age a much more valuable beast for the butcher. He was not perfect, nor on an average a Gold Medal ox; but he most probably would have been in such a show had not two out of the three Judges been Shorthorn men." And this was the beast that the public went for at Islington, where he showed even better, if possible, than he had done during the previous week. Still he is "a two-sided" animal, very level and true from the near, but growing gummy on the off, and so seeming to show a weak place behind the shoulder. With this animal, however, the Shorthorn judges at Islington had nothing whatever to do; for notwithstanding they had one of the Birmingham men amongst them, the Devon, Hereford, and Other-breeds' bench committed the egregious mistake of placing Mr. McPherson's plain, common-looking animal before Messrs. Martin's far more taking ox; and thus the Cross-breeds were put virtually out of competition for the £100 plate. So immediately manifest was this error that one of the stewards went so far as to suggest that the other set of judges should select for themselves a better beast from the classes they had not been acting over than the one which their fellows had brought out. But this, of course, would have necessitated judging the whole of this section over again, and as this could not be admissible the way was in a great measure cleared for Lord Aylesford's steer, who had worn well, and came out still very fresh and blooming. He is certainly an animal of much style, very good to meet, and with a capital back; but, as we have already said of him, he is not thoroughly true—the more particularly forward. His head, not quite a nice one as he is hog-jawed, is badly set-on, and he is not well-covered about his shoulders. In fact a much finer specimen of the Shorthorn breed was Mr. Outhwaite's ox, which our Leeds correspondent described so fully last week, and there was no animal that won so easily in his class. But the judges made every allowance they could for early maturity, and so decided for the younger beast, although he would never promise to grow into so good an ox as the other. Writing of the Devons at Birmingham, we said, "there were this season two really good classes of oxen, that walked up from their stalls with something of the air of race-horses; as assuredly there is no beast shows so much blood as a Devon. Of the first and second in the old class and the first and second in the young class it was anything for choice, so evenly were they matched, and so close was the competition. The best *bred* and *fed* was assuredly Mr. Hambro's Delemoe, a very blood-like three-year-old, all good meat to the hand, and an admirable animal when out; while Mr. Nixey's next best in this lot was very neat and taking, but not so ripe. The judges, however, pronounced the best of all the Devons to be Mr. Farthing's oldest steer, the second in his class at the Plymouth show last Christmas, and a beast of more breed and quality than the Somerset-Devons always reach to. Then he was firm in his flesh if not so forward as he might be, and Mr. Burton's long, straight, stylish second was almost his equal, if Mr. Hambro's were not the best of the three." And at Islington, notwithstanding that Mr. Farthing's best of all the Devons at Birmingham was in the yard, the champion of the breed for £100 was Mr. Hambro's three-year-old; no question the ripest and nicest ox of his kind. If Mr. Outhwaite's was the handsomest sample of the Shorthorn males, Messrs. Mitchell's Blue Belle was still more unmistakably the

belle of her company. She shows a deal more breeding and character than Sir Walter Trevelyan's best of all the cows and heifers, and it appears that our opinion as to her "still being more an ornament for the herd than a victim to the shambles" is to be acted, on as Blue Belle returns to Alloa, there being hopes that she is in calf.

There would of a necessity be much more of the old story in going through these three established breeds; but we may just mention in passing, that Mr. Bettridge's handsome steer, the third, as he should have been second at Birmingham, is out of Nora, and not Stately 2nd, Mr. Evans having sold two steers from the Swanstone herd, to go into Berkshire. The Sussex, which make no mark in the Midlands, are rapidly improving as show stock, although their breeders quite scout the notion of their owing anything of this higher quality to the Devon. There is assuredly no variety of stock which comes more "sorry," a pretty good proof of the breed being established, and not tampered with. They would seem, however, only to feed up to a certain point, and in the capital entry of steers, one or two would have had more notice had more been made of them. It is not so long since that a Sussex stood in for the cup, and at this very meeting the Sussex and the Highlanders were the only distinct breeds of which whole classes were commended. But this, though, is saying almost too much, for the Highlanders are not a distinct breed according to the ruling of the Smithfield Club. They are the rather "Scotch-horns," and accordingly a capital class of those beautiful picturesque shaggy-coated Highlanders was disfigured by the appearance of an animal which had little or nothing of the true Highlander about him; and yet this brute, as a butcher's beast, was placed first. As a sample of anything Mr. Morrison's handsome, long, low, and sturdy mountaineer was worth a thousand of the other, which began with an ugly "cowy" half-Ayrshire head, as he is probably a cross, and where he would not have won. There is no primer beast, according to either grazier or butcher, than your true Highlander, and there is no more taking one in the show-yard, and yet the Council of the Smithfield Club refuses to allow him a rank of his own, but sorts him with mongrels, and turns the whole breed into a burlesque. Of course, an objection was lodged against Wishart and Wyalie's beast, and of course nothing came of this, as the class was open to all Scotch cattle with horns on their heads; although it is not so clear after all, his breeder being not known, and the animal itself exhibiting no particular features of any breed, how it could be passed as a Scot. A first cross for feeding has commonly an advantage over a pure-bred beast, and the present open and very unsatisfactory condition should be amended forthwith, or anything with "a crumpley horn" might on the same showing be entered amongst the Shorthorns.

With a judge straight up from Birmingham in each division, the awards in the sheep classes ran almost everywhere the same, save where occasionally an entry was absent, and inferior animals succeeded to the place. As a whole, however, the sheep here were superior to those exhibited in the Midlands, breeders like Lord Walsingham reserving their best lots, and others like Mr. Overman with his cross-breeds, holding back until they came on to London. And here the strength of the sheep show was to be found; for when the two sets of judges met to award the new £50 premium, they divided in this way—three declared for Lord Walsingham's Southdowns, two for Mr. John Overman's capital cross of a Norfolk longwool with a Southdown ewe, and one for Lord Berners' Leicesters. The Merton flock, moreover, in the actual adjudication was not only first, but second, the yearlings coming next to the old pen, and the cross-breeds being by

a majority considered "next best." As we have already said, a first cross, whether with cattle or sheep, will, of course, always tell at a fat stock show; as nevertheless, the longer the truly-bred flocks are kept pure, the more valuable will they become. The Keythorpe Leicesters have some merit in this way, although they do not quite realise the thoroughbred type of the now somewhat old-fashioned Leicester sheep. The classes here were still respectably filled, with sheep uniting good frames with coats not heavy, but fine and lustrous. The Cotswolds are apparently set down as the next "established" breed of the white faces; but the hill-men must show up stronger at our national gatherings, if they would retain their position among the first breeders of this country. Two pens, one good and one indifferent, are not calculated to carry a favourable recollection on to next year's ram sales. Of the Lincolns, again, there were only five entries; but they were heavy and good of both frame and wool, a deal of the credit for coat being apparently due to the pure Leicesters. The awards went in favour of the three same exhibitors as at Birmingham, or, indeed, for that matter, as at Lincoln in August. Still, some dissatisfaction was expressed at the placing of the first, where the sheep were too light in their coats. The Romney Marsh sheep handled as they die, well, but their peculiar features are still undisturbed by improvement, and their heads, scrags, back-bone, legs, and hair as significant as ever of their ancient and uncontaminated race. If it be not paradoxical to say so, the value of a pure-bred was admirably shown in the cross-bred long-wooled class; for here there was a pen of first-class Leicester and Lincolns, which had all the form and quality of mutton and fleece of the Leicester, while their live weight was 7 cwt. 26lbs., or heavier than one pen of the Lincolns, and nearly as heavy as some other pens of these sheep. This cross was achieved by Mr. W. D. Wootton, and a better mixture has seldom been seen. Sir W. de Capel Brooke's "nick" of the same kind, but with more Lincoln in it, was also very successful; while Messrs. Howard's Oxford-and-Gloucesters were the heaviest if not by any means the handsomest of the class.

The great pride of the show was clearly to be found amongst the Southdowns; and as we said at Birmingham, if there had been a prize for the best entry of any animals Lord Walsingham would have won it. Lord Sondes had some very good second-prize shearlings, and Sir W. Throckmorton's third pen were heavier than the first shearlings; but the style and quality of the Mertons were deservedly triumphant, as it is to be hoped we are coming to see that it is not mere weight which marks the excellence of a Southdown. The light-weights from the same famous flock were still prettier, and Mr. Foljambe and Lord Sondes quite deserving of their places, keeping to purity of type as well as to early development; but Mr. Rigden, whose stock would seem to come very capriciously was in no force, and Sussex, indeed, quite out of form. No wonder that the judges commended the class of old sheep, for never has there been one so regular and true in form after high feeding from very lambs. And here the Merton wethers reigned supreme as they deserved, for taking them all in all, for fineness of touch, broad and level shoulders, muscular backs and rumps, and "legs of mutton," they were certainly pictures to look on, and the £50 award spoke for itself.

The Hampshire or Wiltshire Downs were better than at Birmingham; and the Messrs. Russell's sheep were remarkable for the great amount of flesh of fine quality, their backs being excellent, and there was no pen better fed. The Shropshires decline in number, and as all the older breeders of note were again absent, Lord Chesham

took their pride of place with his neat and well fed pen, the pick of his Bingham winners, Mr. Nock's being again a very good second with his larger sheep. The one pen limit let in Lord Wenlock as third, Mr. Bach's, Mr. Matthew's, and Mrs. Beach's entries, for being absent. Lord Chesham made an entry of two-shears, but his young flock is probably scarcely up to this class as yet, for they were not sent; and this again gave Lord Wenlock a turn with his "faggy" coats and infirm mutton, Lord Aylesford's third best being clumsily disfigured by the shears; but the Eacrick pen had no right to beat Mrs. Beach, and the Birmingham placing was no question the sounder award. Some of the Oxfordshire Downs were also by no means improved from the wool on their backs having been cut down, while they were bedaubed with a terrible mixture, like fish oil and brown ochre. Mr. Alfred Rogers did not bring on his Birmingham pen, and although he again won the competition was much keener, with all the prize pens tracing to Mr. Charles Howard's flock. This of itself proves that uniformity and careful culling is coming to be appreciated, as perhaps no man has now a more level flock of ewes than they can show you at Biddenham.

The mountain breeds, favourites as they often are with the butcher, are not likely to wander far from their own walks, if from their picturesque appearance they tell well in the show-yard; but considering the breeders of the Dorset and Somerset horns are going in for more distinctive rank of their own, the argument they offered here was not a very strong one. In a mixed lot of Ryelands, Cheviots, Dorsets, "&c.," there were three entries for three prizes—one of Cheviots, one of Dorsets, and one of Ryelands. Then there were two pens of Exmoors, and one of Scotch mountaineers.

In the Extra Stock Lord Berners was beaten in a class for single Leicester wethers, by a sheep from Eastburn, Driffild, in which competition the great difference in the weight of each no doubt told. From the other long-wools, Mr. J. H. Casswell's sheep died last week; had this not been so, there would have been a close run between it and Mr. Harris' first cross which took the Cup.

The single Southdown wethers were very irregular, and the remarkable beauty, as well as good weight, of Lord Walsingham's, made this as easy a winner for the flock as in other classes. For ewes, however, Sir William Throckmorton took the Cup, and beat Lord Walsingham. The Cup sheep, for a short-wooled wether, not Southdown, was a Shropshire, and an admirable sheep, although of not a very heavy weight for this breed. Amongst the ewes was a wonderful Hampshire Down, for size and quality—within 8lbs. of Mr. Druce's Oxford Down wether in the males of this class, and heavier by 32lbs. than Mr. Nock's Shropshire wether. Her age, moreover, was only twenty-two months.

Mr. Overman's absence from Bingley Hall is now explained; for he evidently reserved his forces for London. This answered well, for in the cross-bred long and short-wooled sheep he took the £20 Cup as well as medal for the best pen of sheep in the Shropshires, Oxford, cross-breeds, and any other sort not specified in the prize-list. There was only one heavier pen in the class, and these were Hampshires and Lincolns, the weight of which was 7-2-18, and they were sent by Mr. Rook, of Watton, Norfolk. In the class under 220 lbs., Mr. Overman was again first, Mr. Hine, who has often been a good match for the Burnham sheep, being on this occasion nowhere.

In the pig show there was but little competition; as, in fact, in many of the classes the business was got through on the agreeable condition of all prizes and no blanks, there being in all some eighteen

premiums to be distributed amongst thirty-four pens. Of these, four or five lots were wonderfully good, and the remainder so moderate that, as the three judges at once admitted to us, they had often a difficulty in finding anything good enough to win. Still this section opened well, for Mr. Cattle's first prize white pigs, were at just nine months' old about as good a pen as ever was exhibited, and it is a nice question whether they should not have taken the Cup for "the best of all the pigs." Captain Warren's second here are sadly short of hair, and, in truth, not so good as Mr. Lynn's unnoticed entry. But the Birmingham pigs from Stroxtton did better in the next class, where they beat a very inferior entry, and were straightway objected to, though the veterinary evidence went for nothing, and the stewards had no hesitation in passing the first prize pen. As we wrote of them in the Midlands, they are light in their middles; but are otherwise very good, with capital heads for whites, as have Lord Radnor's in the next class. One of the Colehill is coarse in his coat, but the three are preferable to Mr. Dunn's first; while it is difficult to understand for what her Majesty's entry was commendable. At double the age they are just about the size and weight of Mr. Cattle's pigs, as in no other way remarkable for quality or excellence. Mr. Chamberlayne's first lot of blacks would be one of the picked pens of the show; but then in the very next class some of these same pigs are disqualified as over the stated age. Not only were the inspectors against them, but the bailiff or pigman admitted on examination that the same trio were exhibited at Southampton, and that they had dropped some thirty days in the interim. That is, according to that at which they were entered at in the summer, they were now just so much below their proper age. Mr. Benjafield's improved Dorsets, and very good pigs, succeed to the place; and Mr. Kent becomes second best with a nice level lot. The "effect" of Mr. Coote's cup pen was destroyed by one of the three dying soon after the award was made; while, smart pigs as they are, it is not so clear, as we have already intimated, that they were so decidedly the best. It depends a vast deal whether a judge have himself a black or white "fancy." The Berkshires are in no great force, and we have now a new variety in the "Bayfordbury breed," three good sorty pigs certainly; but surely there is something of an absurdity in calling every sty a breed of itself, as where is this to end? The Smithfield pig show was inferior to the Birmingham, and that is proved by second and third prize pens there reaching to first in London. Of Mr. Clark's Berkshires we then spoke as being "very long and handsome, but as hardly made up enough for exhibition or well matched, or they otherwise would at least have been second," and now they are first. The single pig which takes the medal is called a Dorset; but there are unmistakeable signs of his having been "improved" by a cross of the Berkshire. The pigs, like other sections of the show, have been terribly over-puffed by the creatures of the Agricultural Hall Company; and we thoroughly agree with the judges as to the very moderate character of the general entries in the still anything-but-salubrious swine-hole. The weights of the pigs have not been taken; but we give our prize list with the weights of all the winning cattle and sheep appended.

On Friday, the closing day of the meeting, the veterinary inspectors examined every animal in the Hall, amongst which they found no suspicion of disease. About 40 beasts were, however, on Saturday, stopped by order of the Privy Council on account of disease. Some explanation of this may be found in the following circumstances, the account of which has been given us by very good authority. The animals

from the Birmingham Show—which were forwarded in a train of 30 trucks—arrived alongside the pens containing about 800 foreign beasts, which were in the Maiden-lane Station previous to the arrival of the Birmingham train. A large number of these foreign animals were driven alongside the train which contained the beasts intended for the Agricultural Hall, and which were afterwards driven there. The close proximity into which the animals were brought was sufficiently dangerous, but things were made worse by the persons in charge of the animals from Birmingham taking the bags containing the meal and cake from the trucks, and placing them on the spot over which the foreign animals had passed. This provender was afterwards returned to the beasts, and we believe was actually forwarded to the Agricultural Hall. Our informant was an eye-witness, and took the pains to call the attention of the railway officials to the proceeding, and, to their great credit, the latter did their utmost to keep the animals separate.

JUDGES.

DEVONS, HEREFORDS, SUSSEX, NORFOLK OR SUFFOLK
POLLED, LONG-HORNED, IRISH CROSS OR MIXED.

W. H. Keary, Bridgenorth, Salop;
W. Yeomans, Stretton Court, Hereford;
John Ford, Ruahton, Blandford.

SHORT-HORNS, SCOTCH AND WELSH.

Hugh Aylmer, West Dereham, Norfolk;
Charles Howard, Biddenham, Beds;
William Sanday, Radcliffe-on-Trent, Notts.

LEICESTERS, COTSWOLDS, LINCOLNS, KENTISH OR ROMNEY
MARSH, OXFORDSHIRE, MOUNTAIN, AND CROSS.

Charles Clark, Scopwick, near Lincoln;
Ralph Newton, Campsfield, Woodstock;
Jonn. Davis, Webton Court, Hereford.

SOUTH-DOWNS, HAMPSHIRE OR WILTSHIRE, SHROPSHIRE,
RYLAND, CHEVIOT, AND DORSET.

Henry Masfen, Pendeford, Wolverhampton;
Henry Luger, Ingham, Bury St. Edmund's;
Henry Hart, Beddingham, Lewes, Sussex.

PIGS.

Joseph Smith, Henley-in-Arden, Warwick;
Richard Woodman, Southcote, Lewes;
Gilbert Murray, Elvaston Castle, Derby.

CATTLE.

The following Classes are without restrictions as to feeding, yet the kind or kinds of food must be certified. The breeder of the best entry in every class receives a Silver Medal.

DEVONS.

Steers, not exceeding 2 years and 6 months old.

First Prize of £20, to J. H. Buller, Downes, Crediton, Devon—13 cwt. 26lbs.

Second of £15, to W. G. Nixey, Upton Court Farm, Slough, Bucks—12 cwt. 2 qrs. 12lbs.

Third of £10, to Her Majesty the Queen, the Prince Consort's Norfolk Farm, Windsor, Berks—10 cwt. 3 qrs. 7lbs.

Steers, not exceeding 3 years and 3 months old.

First Prize of £30, to C. Hambro, M.P., Milton Abbey, Blandford, Dorset—14 cwt. 6lbs.

Second of £20, to C. McNiven, Perrysfield, Godstone, Surrey—15 cwt. 4lbs.

Third of £10, to W. G. Nixey, Upton Court Farm, Slough, Bucks—13 cwt. 1 qr. 14lbs.

Commended.—R. Farthing, Farrington, Somerset—14 cwt. 1 qr. 8lbs.

Steers or Oxen, above 3 years and 8 months old.

First Prize of £30, to W. Farthing, Stowey Court, Bridgewater, Somerset—14 cwt. 8 qrs.

Second of £20, to J. J. Farquharson, Langton House, Blandford, Dorset—15 cwt. 13lbs.

Third of £10, to R. Burton, Place Barton, Broadclyst, Devon—16 cwt. 8lbs.

Heifers, not exceeding 4 years old.

First Prize of £25, to W. G. Nixey, Upton Court Farm, Slough, Bucks—12 cwt. 1 qr. 4lbs.

Second of £15, to W. Farthing, Stowey Court, Bridgewater, Somerset—13 cwt. 1 qr. 12lbs.

Third of £10, to C. McNiven, Perrysfield, Godstone, Surrey—10 cwt. 3 qrs. 22lbs.

Commended.—W. Smith, Hoopers, Exeter—11 cwt. 2 qrs. 2lbs.

Cows, above 4 years old.

First Prize of £25, to W. Farthing, Stowey Court, Bridgewater, Somerset—16 cwt. 2 qrs. 5lbs.

Second of £15, to W. Smith, Hoopers, Exeter, Devon—12 cwt. 1 qr.

Third of £10, to J. Hitchcock, Broomhouse, South Molton, Devon—14 cwt. 3 qrs. 5lbs.

HEREFORDS.**Steers, not exceeding 2 years and 6 months old.**

First Prize of £20, to P. Turner, The Leen, Pembridge, Leominster, Hereford—14 cwt. 3 qrs.

Second of £15, to Her Majesty the Queen, the Prince Consort's Flemish Farm, Windsor—14 cwt. 3 qrs. 22lbs.

Steers, not exceeding 3 years and 3 months old.

First Prize of £30, to J. Price, Court House, Pembridge, Hereford—16 cwt. 3 qrs. 26lbs.

Second of £20, to The Earl of Darnley, Cobham Hall, Gravesend, Kent—17 cwt. 1 qr. 6lbs.

Third of £10, to H. Bettridge, East Hanney, Wantage, Berks—15 cwt. 3 qrs. 26lbs.

Commended.—A. Pike, Milton, Gloucester—16 cwt. 6lbs.; R. Wortley, Suffield, Norfolk—14 cwt. 2 qrs. 24lbs.

Steers or Oxen, above 3 years and 3 months old.

First Prize of £30, to W. Heath, Ludham Hall, Norwich, Norfolk—19 cwt. 6lbs.

Second of £20, to the Earl of Darnley, Cobham Hall, Gravesend, Kent—18 cwt. 3 qrs. 16lbs.

Third of £10, to H. Bettridge, East Hanney, Wantage, Berks—17 cwt. 24lbs.

Heifers, not exceeding 4 years old.

First Prize of £25, to J. H. Arkwright, Hampton Court, Leominster, Hereford—14 cwt. 8lbs.

Second of £15, to T. Garrett, Compton Scorpion, Shipston-on-Stour, Warwick—14 cwt. 2 qrs. 19lbs.

Third of £10, to R. Coston, Hayton, Stanton Lacy, Bromfield, Salop—13 cwt. 3 qrs. 20lbs.

Commended.—Her Majesty the Queen, Flemish Farm, Windsor—15 cwt. 1 qr. 6lbs.

Cows, above 4 years old.

First Prize of £25, to J. Baldwin, Luddington, Stratford-on-Avon, Warwick—18 cwt. 1 qr. 13lbs.

Second of £15, to A. Benjafield, Stalbridge, near Blanford, Dorset—15 cwt. 25lbs.

Third of £10, to R. Wortley, Suffield, Aylsham, Norfolk—14 cwt. 3 qrs. 4lbs.

SHORTHORNS.**Steers, not exceeding 2 years and 6 months old.**

First Prize of £20, to Her Majesty the Queen, the Prince Consort's Shaw Farm, Windsor—14 cwt. 1 qr. 12lbs.

Second of £15, to Z. W. Stilgo, Adderbury Grounds, Adderbury, Oxford—14 cwt. 3 qrs. 12lbs.

Third of £10, to R. E. Oliver, Sholebroke Lodge, Towcester, Northampton—15 cwt. 1 qr. 23lbs.

Steers, not exceeding 3 years and 3 months old.

First Prize of £30, to the Earl of Aylesford, Packington Hall, Coventry, Warwick—19 cwt. 2 qrs. 23lbs.

Second of £20, to R. Wood, Clapton, Thrapstone, Northampton—17 cwt. 3 qrs. 24lbs.

Third of £10, to Lord Penrhyn, Penrhyn Castle, Bangor, Carnarvon, N. Wales—20 cwt. 13lbs.

Highly commended.—T. Pulver, Broughton, Northampton—17 cwt. 2 qrs. 14lbs.

Steers or Oxen, above 3 years and 3 months old.

First Prize of £30, to J. Outhwaite, Bainesse, Catterick, Yorkshire—20 cwt. 1 qr. 6lbs.

Second of £20, to The Marquis of Exeter, Burghley Park, Stamford—20 cwt. 2 qrs. 21lbs.

Third of £10, to Col. Loyd-Lindsay, M.P., Lockinge Park, Wantage, Berks—20 cwt. 2 qrs. 12lbs.

Highly commended.—R. H. Harris, Earnhill, Morayshire—20 cwt. 2 qrs. 21lbs.; P. Brown, Glentworth, Lincoln—19 cwt. 2 qrs. 21lbs.; J. Freeman, Glapthorne, Northampton—19 cwt. 2 qrs. 23lbs.; R. Wood, Clapton, Thrapstone, Northampton—20 cwt. 3 qrs. 16lbs.

Heifers, not exceeding 4 years old.

First Prize of £25, to Col. Chas. Towneley, Towneley Burnley, Lancaster—17 cwt. 1 qr. 8lbs.

Second of £15, to T. Atherton, Chapel House, Speke, Garston, Lancashire—18 cwt. 3 qrs. 16lbs.

Third of £10, to J. B. Aylmer, Fincham Hall, Downham, Norfolk—16 cwt. 2 qrs. 2lbs.

Highly commended.—J. Reed, Graystone, Aberdeenshire—16 cwt. 14lbs.

Cows, above 4 years old.

First Prize of £25, to Sir W. Calverley Trevelyan, Bart., Wallington, Newcastle-on-Tyne—19 cwt. 15lbs.

Second of £15, to A. and A. Mitchell, Alloa, Clackmannan—16 cwt. 3 qrs. 4lbs.

Third of £10, to the Duke of Devonshire, Holker Hall, Grange, Lancashire—18 cwt. 3 qrs. 22lbs.

Highly commended.—J. Whyte, Clinterty, Aberdeen—20 cwt. 1 qr. 15lbs.

Commended.—R. Eastwood, Thorny Holme, Lancashire—17 cwt. 2 qrs. 25lbs.

SUSSEX.**Steers or Oxen, not exceeding 3 years old.**

First Prize of £20, to Lee Steere, Jayes Park, Dorking, Surrey—17 cwt. 3 qrs. 10lbs.

Second of £10, to J. and A. Heasman, Angmering, Arundel, Sussex—16 cwt. 1 qr. 18lbs.

Third of £5, to G. C. Coote, Tortington, Arundel, Sussex—15 cwt. 2lbs.

Commended.—G. Napper, Orfold, Sussex—14 cwt. 1 qr. 9lbs.; J. M. Montefiore, Crawley, Sussex—13 cwt. 2 qrs. 9lbs.

Steers or Oxen, above 3 years old.

First Prize of £25, to Lee Steere, Jayes Park, Dorking, Surrey—22 cwt. 2 qrs. 2lbs.

Second of £15, to E. Cane, Berwick Court, Lewes, Sussex—18 cwt. 3 qrs. 8lbs.

Third of £10, to J. M. Montefiore, Worth Park, Crawley, Sussex—17 cwt. 24lbs.

Commended.—J. Shoosmith, Berwick, Sussex—21 cwt. 1 qr. 26lbs.; J. Neale, Coldwaltham, Sussex—Not weighed; Right Hon. H. Brand, M.P., Lewes, Sussex—16 cwt. 2 qrs. 18lbs.

Heifers, not exceeding 4 years old.

First Prize of £20, to E. and A. Stanford, Eatons Ashurst, Steyning, Sussex—12 cwt. 3 qrs. 18lbs.

Second of £15, to Lee Steere, Jayes Park, Dorking, Surrey—15 cwt. 2 qrs. 6lbs.

Cows, above 4 years old.

First Prize of £20, to J. and A. Heasman, Angmering Arundel, Sussex—17 cwt.

Second of £15, to J. Shoosmith, Berwick, Lewes, Sussex—17 cwt. 26lbs.

Highly commended.—W. Botting, Hurstpierpoint, Sussex—18 cwt. 1 qr. 28lbs.

Commended.—G. C. Coote, Tortington, Sussex—16 cwt. 2 qrs. 9lbs.; J. Neale, Coldwaltham, Sussex—Not weighed; T. Smith, Knelle, Sussex—17 cwt. 8 qrs. 4lbs.

NORFOLK OR SUFFOLK POLLED.

Steers or Oxen, of any age.

First Prize of £15, to R. C. Symonds, Aylmerton, Roughton, Norfolk—17 cwt. 16lbs.

Second of £10, to W. Harvey, Timworth, Bury St. Edmunds, Suffolk—18 cwt. 2 qrs. 16lbs.

Heifers or Cows, of any age.

First Prize of £15, to His Royal Highness the Prince of Wales, Sandringham, King's Lynn, Norfolk—18 cwt. 1 qr. 4lbs.

Second of £10, to W. T. Mullen, Swafeld House, North Walsham, Norfolk—16 cwt. 1 qr. 4lbs.

LONG-HORNS.

Steers or Oxen, of any age.

The Prize of £10, to Sir J. Harpur Crewe, Bart., Calke Abbey, Derby—21 cwt. 2 qrs.

Commended.—W. T. Cox, Derby—17 cwt. 2 qrs. 18lbs.

Heifers or Cows, of any age.

The Prize of £10, to W. T. Cox, Spondon Hall, Derby—14 cwt. 1 qr. 14lbs.

SCOTCH HORNS.

Steers or Oxen, of any age.

First Prize of £30, to Wishart and Wyalie, Gallowgate, Aberdeen—18 cwt. 1 qr. 6lbs.

Second of £15, to C. Morrison, Basildon Park, Reading, Berkshire—18 cwt. 1 qr. 19lbs.

Highly commended.—The whole class.

Heifers or Cows, of any age.

First Prize of £15, to Sir W. Culverley Trevelyan, Bart., Wallington, Newcastle-on-Tyne—12 cwt. 8 qrs. 8lbs.

Second of £10, to R. Eastwood, Thorneyholme, Clitheroe, Lancashire—13 cwt. 3 qrs. 1lb.

SCOTCH POLLED.

Steers or Oxen, of any age.

First Prize of £30, to J. Stephen Conglass, Inverurie, Aberdeen—23 cwt. 1 qr. 7lbs.

Second of £15, to A. Longmore, Linksfield, Rattie, Banff—20 cwt. 3 qrs. 20lbs.

Heifers or Cows, of any age.

First Prize of £15, to R. Jardine, M.P. Castlemilk, Lockerbie, Dumfries—16 cwt. 6lbs.

Second of £10, to J. Reid, Greystone, Alford, Aberdeen—14 cwt. 1 qr. 5lbs.

IRISH.

Steers or Oxen, of any age.

First Prize of £10, to R. Wortley, Suffield Hall Aylaham, Norfolk—12 cwt. 2 qrs. 16lbs.

Second of £5, to W. Slipper, Catfield, Stalham, Norfolk—18 cwt. 15lbs.

Heifers or Cows, of any age.

First Prize of £10, to Lord Berners, Keythorpe Hall, Leicester—13 cwt. 1 qr. 10lbs.

WELSH.

Steers or Oxen (runts), of any age.

First Prize of £20, to H. Williams, Abercothy, Nantgaredig, Carmarthen—19 cwt. 3 qrs. 22lbs.

Second of £10, to Capt. H. Platt, Gorrddinog, Bangor, Carnarvon—16 cwt. 1 qr. 20lbs.

CROSS OR MIXED-BRED.

Steers not exceeding 8 years old.

First Prize of £25, to J. and W. Martin, Aberdeen—19 cwt. 1 qr. 26lbs.

Second of £15, to W. and J. Lawson, Meikletown, Lessendrum, Huntley, Aberdeen—17 cwt. 1 qr. 7lbs.

Third of £10, to R. Walker, Altyre, Forres, Moray—16 cwt. 1 qr. 14lbs.

Commended.—J. T. Senior, Aylesbury, Bucks—18 cwt. 17lbs.; J. Wortley, Felmingham, Norfolk—16 cwt. 10lbs.

Steers or Oxen, above 3 years old.

First Prize of £25, to J. P. McPherson, Muertan of Kinloss, Forres, Elgin—20 cwt. 8 qrs. 24lbs.

Second of £15, to J. and W. Martin, Aberdeen—24 cwt. 2 qrs. 24lbs.

Third of £10, to R. H. Harris, Barnhill, Forres, Moray—23 cwt. 2 qrs. 16lbs.

Commended.—J. Bruce, Inverquhorney, Aberdeen—18 cwt. 20lbs.

Heifers, not exceeding 4 years old.

First Prize of £20, to J. D. Allen, Pyt House Farm, Tisbury, Salisbury, Wiltshire—16 cwt. 2 qrs. 6lbs.

Second of £10, to H. L. L. Morrison, Blair Guise, Whitehouse, Aberdeen—18 cwt. 1 qr. 8lbs.

Commended.—His Royal Highness the Prince of Wales, Sandringham, Norfolk—13 cwt. 1 qr. 6lbs.

S H E E P.

LEICESTERS.

Fat Wethers, 1 year old (under 23 months.)

First Prize of £20, to Lord Berners's, Keythorpe Hall, Leicester—6 cwt. 2 qrs. 21lbs.

Second of £15, to W. Brown, High Gate, Holme-on-Spalding Moor, York—6 cwt. 2 qrs. 22lbs.

Third of £5, to B. Painter, Burley-on-the-Hill, Oakham, Rutland—6 cwt. 2 qrs.

Fat Wethers, 1 year old (under 23 months.)

Each Sheep not to exceed 230 lbs. live weight.

First Prize of £20, to Lord Berners, Keythorpe Hall, Leicester—5 cwt. 3 qrs. 7lbs.

Second of £15, to J. Newman, Harrowden, Bedford—5 cwt. 8 qrs. 4lbs.

Third of £5, to Colonel Lowther, Barleythorpe Hall, Oakham, Rutland—5 cwt. 1 qr. 20lbs.

COTSWOLDS.

Fat Wethers, 1 year old (under 23 months.)

First Prize of £20, to Right Hon. Sir J. Rolt, Oze-worth Park, Wotton-under-Edge, Gloucester—7 cwt. 2 qrs. 5lbs.

Second of £15, to J. Baldwin, Luddington, Stratford-on-Avon, Warwick—7 cwt. 16lbs.

LINCOLNS.

Fat Wethers, 1 year old (under 23 months.)

First Prize of £20, to J. Byron, Kirkby Green, Sleaford, Lincoln—7 cwt. 3 qrs. 26lbs.

Second of £15, to J. R. Caswell, Quadring, Spalding, Lincoln—7 cwt. 8 qrs. 1lb.

Third of £5, to R. N. Morley, Leadenham, Grantham, Lincoln—7 cwt. 2 qrs. 16lbs.

KENTISH OR ROMNEY MARSH.

Fat Wethers, 1 year old (under 23 months.)

First Prize of £15, to W. Burch, Rhode Court, Selling, Faversham, Kent—6 cwt. 2 qrs. 12lbs.

Second of £10, to J. Newport, Elmsted Court, Ashford, Kent—6 cwt. 1 qr. 16lbs.

CROSS-BRED LONG WOOLS.

Fat Wethers, 1 year old (under 23 months.)

First Prize of £15, to T. W. D. Harris, Wootton, Northampton—7 cwt. 26lbs.

Second of £10, to Sir W. De Capel Brooke, Bart., Geddington Grange, Kettering, Northampton—6 cwt. 3 qrs. 14lbs.

SOUTH-DOWNS.

Fat Wethers, 1 year old (under 23 months.)

First Prize of £20, to Lord Walsingham, Merton Hall, Thetford, Norfolk—6 cwt. 17lbs.

Second of £10, to Lord Sondes, Elmham Hall, Thetford, Norfolk—6 cwt. 3lbs.

Third of £5, to Sir W. Throckmorton, Bart., Buckland, Faringdon, Berks—6 cwt. 1 qr. 7lbs.

Highly commended.—Duke of Richmond, Goodwood—5 cwt. 1 qr. 15lbs.

Commended.—Earl Radnor, Coleshill—5 cwt. 1 qr. 11lbs.

Fat Wethers 1 year old (under 23 months).

Each Sheep not to exceed 200 lbs. live weight.

First Prize of £15, to Lord Walsingham, Merton Hall, Thetford, Norfolk—5 cwt. 20lbs.

Second of £10, to G. S. Foljambe, Osberton Hall, Worksop, Nottingham—5 cwt. 16lbs.

Third of £5, to Lord Sondes, Elmham Hall, Thetford, Norfolk—4 cwt. 3 qrs. 25lbs.

Highly commended.—Lord Braybrooke, Saffron Walden—5 cwt. 7lbs.

Commended.—Duke of Richmond, Goodwood—4 cwt. 3 qrs. 14lbs.

Fat Wethers, 2 years old (above 23 and under 35 months).

First Prize of £20, to Lord Walsingham, Merton Hall, Thetford, Norfolk—6 cwt. 1 qr. 25lbs.

Second of £10, to Sir W. Throckmorton, Bart., Buckland, Faringdon, Berks—6 cwt. 3 qrs. 16lbs.

Third of £5, to Earl Radnor, Coleshill, Highworth—7 cwt. 17lbs.

Highly commended.—Duke of Richmond, Goodwood—6 cwt. 3 qrs. 23lbs.

Commended.—Class generally.

HAMPSHIRE OR WILTSHIRE-DOWNS.

Fat Wethers, 1 year old (under 23 months).

First Prize of £20, to R. and J. Russell, Horton Kirby, Dartford, Kent—7 cwt. 1 qr. 11lbs.

Second of £15, to J. Walter, Bearwood, Wokingham, Berks—7 cwt. 8lbs.

Third of £5, to L. Loyd, Monk's Orchard, Addington, Surrey—6 cwt. 2 qrs. 11lbs.

Highly commended.—J. Russell, Dartford, Kent—6 cwt. 2 qrs. 19lbs.

Commended.—Class generally.

SHROPSHIRE.

Fat Wethers, 1 year old (under 23 months).

First Prize of £20, to Lord Cheaham, Latimer, Chesham, Buckingham—6 cwt. 25lbs.

Second of £10, to T. Nock, Sutton Maddock, Shifnal, Shropshire—6 cwt. 2 qrs. 23lbs.

Third of £5, to Lord Wenlock, Eserick Park, York—6 cwt. 6 qrs. 2lbs.

Fat Wethers 2 years old (above 23 and under 35 months).

First Prize of £15, to Lord Wenlock, Eserick Park, York—7 cwt. 1 qr. 24lbs.

Second of £5, to S. Beach, The Hattons, Brewood, Penkridge, Staffordshire—6 cwt. 3 qrs. 18lbs.

Commended.—Earl of Ailesford, Coventry—7 cwt. 1 qr. 21lbs.

OXFORDSHIRES.

Fat Wethers, 1 year old (under 23 months).

First Prize of £20, to A. Rogers, Bromham, Bedford—7 cwt. 4lbs.

Second of £15, to F. Street, Harrowden, Bedford—6 cwt. 3 qrs. 11lbs.

Third of £5, to S. Druce, Eynham, Oxford—7 cwt. 4lbs.

Fat Wethers, 2 years old (above 23 and under 35 months).

First Prize of £15, to A. Rogers, Bromham, Bedford—6 cwt. 2 qrs. 6lbs.

MOUNTAIN-BREDS.

Fat Wethers (of any White-faced Mountain breed, of any age.)

First Prize of £15, to W. Smith, Hoopern, Exeter, Devon—5 cwt.

Second of £10, to J. Tapp, Twitchen, South Molton, Devon—4 cwt. 3 qrs. 2lbs.

Fat Wethers (of any Black-faced or Speckled-faced Mountain-breed, of any age.)

First Prize of £15, to J. M'Gill, Rotchell, Dumfries—5 cwt. 2 qrs. 12lbs.

Second of £10, to The Marquis of Aylesbury, Home Farm, Savernake Forest, Marlborough, Wiltshire—4 cwt. 1 qr. 4lbs.

RYELANDS, CHEVIOTS, DORSETS, &c.

Fat Wethers.

First Prize of £15, to J. B. Downing, Holme Lacey, Hereford—6 cwt. 18lbs.

Second of £10, to H. Farthing, Nether Stowey, Bridgewater, Somerset—6 cwt. 3 qrs. 13lbs.

Third of £5, to J. McGill, Rotchell, Dumfries—6 cwt. 17lbs.

CROSS-BRED LONG AND SHORT WOOLS.

Fat Wethers, 1 year old (under 23 months).

First Prize of £20, to J. Overman, Burnham Sutton, Burnham Market, Norfolk—7 cwt. 1 qr. 3lbs.

Second of £15, to W. Rook, Watton, Thetford, Norfolk—7 cwt. 2 qrs. 18lbs.

Third of £5, to G. Hine, jun., Oakley, Bedford—6 cwt. 27lbs.

Fat Wethers, 1 year old (under 23 months).

Each Sheep not to exceed 220 lbs. live weight.

First prize of £10, to J. Overman, Burnham Sutton, Burnham Market, Norfolk—5 cwt. 2 qrs. 16lbs.

Second of £5, to Colonel Loyd Lindsay, M.P., Lockinge Park, Wantage, Berks—5 cwt. 2 qrs. 9lbs.

P I G S.

(The weights of Pigs not registered)

WHITE.

Not exceeding 9 months old.

First prize of £10, to C. Cattle, Wiseton Grange, Bawtry, Nottingham.

Second of £5, to Captain R. P. Warren, Worthing House, Basingstoke.

Highly commended.—Rev. J. O. Stevens, Savernake, Wilts.

Above 9 and not exceeding 12 months old.

First prize of £10, to J. Lynn, Church Farm, Stroxtan, Grantham, Lincoln.

Second of £5, to W. H. Dunn, Standen House, Hungerford, Berks.

Highly commended.—T. L. M. Cartwright, Melville, Fife.

Above 12 and not exceeding 18 months old.

First prize of £10, to W. H. Dunn, Standen House, Hungerford, Berks.

Second of £5, Earl Radnor, Coleshill, Highworth.

Commended.—Her Majesty the Queen, Windsor.

BLACK.

Not exceeding 9 months old.

First prize of £10, to T. Chamberlayne, Cranbury Park, Winchester, Southampton.

Second of £5, to J. Coate, Hammoon, Blandford, Dorset.

Commended.—J. Kent, Whyke, Sussex.

Above 9 and not exceeding 12 months old.

First Prize of £10, to T. Chamberlayne, Cranbury Park, Winchester, Hampshire.

Second of £5, to A. Benjafield, Stalbridge, Blandford, Dorset.

Highly commended.—J. Kent, Whyke, Sussex.

Commended.—C. M'Niven, Perrysfield, Surrey.

Above 12 and not exceeding 18 months old.

First Prize of £10, to J. Coate, Hammoon, Blandford, Dorset.

Second of £5, to Captain R. P. Warren, Worting House, Basingstoke, Hampshire.

Commended.—C. McNiven, Perrysfield, Surrey.

OTHER BREEDS.

Not exceeding 9 months old.

First Prize of £10, to S. Druce, Eynaham, Oxford.

Second of £5, to J. Biggs, Cublington, near Leighton Buzzard, Beds.

Above 9 and not exceeding 12 months old.

First Prize of £10, to J. Roberson, Bayfordbury Park Farm, Hertford, Herts.

Second of £5, to J. Biggs, Cublington, near Leighton Buzzard, Beds.

Highly commended.—J. Treadwell, Aylesbury, Berks.

Above 12 and not exceeding 18 months old.

First Prize of £10, to J. H. Clark, Altwood, Maidenhead, Berks.

Second of £5, to J. P. King, North Stoke, Wallingford, Berks.

EXTRA STOCK.

CATTLE.

Silver Medal and £5 prize, to the exhibitor, for the best Steer or Ox, to G. S. Foljambe, Osberton Hall, Worksop, Nottinghamshire—21 cwt. 12lbs.

Highly commended.—Her Majesty the Queen, Windsor—14 cwt. 1 qr. 20lbs.

Commended.—G. Lawson, Clynesish, Sutherland, N.B.—14 cwt. 1 qr. 8lbs.; H.R.H. the Prince of Wales, Sandringham—13 cwt. 1 qr. 10lbs.; Wishart and Wylie, Gallowgate, Aberdeen—17 cwt. 1 qr. 16lbs.; T. Bromwich, Alton, Southampton—18 cwt. 1 qr. 18lbs.; J. Overman, Burnham Sutton—10 cwt. 3 qrs. 12lbs.

Silver Medal and £5 prize, to the exhibitor, for the best Heifer or Cow, to J. Christy, Boynton Hall, Chelmsford, Essex—16 cwt. 1 qr. 18lbs.

Highly commended.—R. Jardine, M.P., Castlemilk, Dumfries—9 cwt. 1 qr. 27lbs.

SHEEP.

Silver Medal, to the exhibitor, for the best Leicester Wether Sheep, to The executors of F. Jordan, Eastburn, Driffield, York—2 cwt. 1 qrs. 19lbs.

Silver Medal, to the exhibitor, for the best Leicester Ewe, to W. Brown, Highgate, Holme-on-Spalding Moor, York—2 cwt. 2 qrs. 17lbs.

Silver Medal, to the exhibitor, for the best Long-woolled Sheep (not Leicester), to T. W. D. Harris, Wootton Northampton—2 cwt. 1 qr. 12lbs.

Silver Medal, to the exhibitor, for the best Southdown Wether Sheep, to Lord Walsingham, Merton Hall, Thetford, Norfolk—1 cwt. 3 qrs. 26lbs.

Commended.—Class generally.

Silver Medal, to the exhibitor, for the best Southdown, to Sir W. Throckmorton, Bart., Buckland, Faringdon, Berks—2 cwt. 10lbs.

Silver Medal, to the exhibitor, for the best Short-woolled Wether (not Southdown), to T. Nock, Sutton Maddock, Shiffnal, Salop—2 cwt. 1 qr. 22lbs.

Silver Medal, to the exhibitor, for the best Short-woolled Ewe (not Southdown), to J. Rawlence, Bulbridge, Wilton, Salisbury, Wiltshire—2 cwt. 2 qrs. 26lbs.

Commended.—J. Treadwell, Aylesbury—2 cwt. 3 qrs. 25lbs.

Silver Medal, to the exhibitor, for the best Cross-bred Sheep (Long and Short-woolled Cross) to J. Overman, Burnham Sutton, Burnham Market, Norfolk—2 cwt. 1 qr. 8lbs.

PIGS.

Silver Medal, to the exhibitor, for the best Pig, to C. McNiven, Perrysfield, Godstone, Surrey.

Highly commended.—Captain R. P. Warren, Basingstoke; J. Roberson, Hertford.

Commended.—T. Chamberlayne, Winchester; J. Overman, Burnham Sutton; Rev. J. O. Stephens, Marlborough, Wilts; J. Coate, Blandford, Dorset.

SILVER CUPS.

A Silver Cup, value £40, to the exhibitor, for the best Steer or Ox in any of the classes, to the Earl of Aylesford, Packington Hall, Coventry, Warwick—19 cwt. 2 qrs. 28lbs.

A Silver Cup, value £40, to the exhibitor, for the best Heifer or Cow in any of the classes, to Sir W. Calverley Trevelyan, Bart., Wallington, Newcastle-on-Tyne—19 cwt. 15lbs.

A Silver Cup, value £20, to the exhibitor, for the best pen of Leicesters, Cotswolds, Lincoln, Kentish, or other Long-woolled breed, in any of the classes, to Lord Berners, Keythorpe Hall, Leicester—6 cwt. 2 qrs. 21lbs.

A Silver Cup, value £20, to the exhibitor, for the best pen of one-year-old South Downs, Hampshire, or Wiltshire Downs, to Lord Walsingham, Merton Hall, Thetford, Norfolk—6 cwt. 17lbs.

A Silver Cup, value £20, to the exhibitor, for the best pen of Shropshire, Oxfordshire, Cross-bred, or any other breed of Sheep (not specified in the prize list) in any of the classes, to J. Overman, Burnham Sutton, Burnham Market, Norfolk—7 cwt. 1 qr. 8lbs.

A Silver Cup, value £20, to the exhibitor, for the best pen of Pigs in any of the Classes, to J. Coate, Hammoon, Blandford, Dorset.

CHAMPION PRIZES.

A Piece of Plate, value £100, to the exhibitor of the best Beast in the Show, to the Earl of Aylesford, Packington Hall, Coventry, Warwick—19 cwt. 2 qrs. 23lbs.

A Piece of Plate, value £50, to the exhibitor of the best pen of Sheep in the Show, to Lord Walsingham, Merton Hall, Thetford, Norfolk—6 cwt. 1 qr. 25lbs.

A Piece of Plate, value £10, to the exhibitor of the best single Sheep in extra stock, to W. Brown, Highgate, Holme-on-Spalding Moor, York—2 cwt. 2 qrs. 17lbs.

THE IMPLEMENTS.

This department appears to be increasing in interest every year. So much is this the case that the entrance of anything which is not of a really agricultural character is prohibited by the authorities. So rigidly is this carried out, that Messrs. Aveling and Porter's steam roller for roads—with which farmers certainly have much to do—was not considered to be admissible; and coming down to smaller matters, Bradford and Co. stood among their churns and weighing apparatus, although their specialities are "Vowel" and other oddly-named washing machines. The number of stands, as compared with last year, was in 1868, 192, and this year 208, which were divided into 31 on the ground floor and 177 on the galleries.

Taking the catalogue as it runs, we find on the first stand a combined tubular and corrugated boiler, in which the water is held in horizontal and perpendicular pipes and in corrugated "tubes," each with three "lobes," the water being free to circulate through small apertures inside between the indentations, which are constructed so as not quite to meet. These water spaces between the three cylinders are stayed, to prevent the sides from collapsing. The object of this boiler is to prevent accidents from bursting, as well as to economize fuel, which it is said to do in consequence of the fire passing around the water in the tubes instead of through a body of water in which tubes are placed. This is a specimen boiler made by Kinsey, Norton, Hill, and Co., of Nottingham, and for it they claim great advantages. Messrs. Howard, of Bedford, have applied this principle of passing the heat around water instead of through it for upwards of two years. Their boiler is, however, a uniform system of

perpendicular tubes inserted into horizontal pipes. These joints were originally formed by dropping one pipe into the other, the matrix being furnished with an India-rubber ring to prevent leakage. This plan, however, has been abandoned, for the tubes are now made of wrought iron and the joints are formed by the upright pipes being screwed tightly into the horizontal tubes. The principle of heating and economizing fuel is of course the same as described in connection with Messrs. Kinsey and Co.'s boiler. Which, however, is the more efficient remains to be decided by actual experiment. Besides these tubular and combined tubular and corrugated surface boilers, we are informed that one on the same principle, but of American invention, has recently been introduced. Robey and Co., of Lincoln, exhibited a traction portable and vertical boiler, to which is fitted a patent "governor" for regulating the flow of steam to the cylinder, whereby the highest amount of power according to the pressure in the boiler is obtained. This "governor" is placed in the crank shaft, and works horizontally upon the eccentric direct. Messrs. Garrett and Sons, Leiston, keep even with the times, and show some very elegant and effective self-moving steam-engines with the farm machinery which they are intended for drawing and driving.

A striking novelty, which is as admirable for its simplicity of construction as for its effective working, is added to Messrs. Hornsby and Son's reapers and mowers. This is for throwing the cutting parts of the machine in and out of gear. It consists in a light and elegant drop catch attached to the side of the shaft; this catch falls into, and holds in its place, the eye of a light rod which runs to the gearing. By this apparatus the man using the rake may keep both hands to that implement, and merely by a triding motion of his foot throw the gearing in or out, as may be necessary. Like all simple and effective mechanical contrivances, it seems to be strange that this or some similar application has not been adopted before.

Passing by Messrs. Barrows and Stewart's and Messrs. Tucker and Sons' stands, with the only remark, viz., that the former firm exhibited some highly-finished work in steam engines and other articles, and that the sound work of the latter in engines, combined machines, and dressing machines, need no comment, we come to Messrs. Tuxford and Son's, of Boston, in connection with whose stand there are some facts for comment. The elegant donkey, pony, one-horse, and other engines of this firm are well known for their chocolate colour, fine proportions, and finish. But it is not with the quality and efficiency of engines and machines with which we here have to do, for our views are now carried around the Cape, past Hindostan, and on to the port of Peking in the Chinese Empire. By some skilled diplomacy the Messrs. Tuxford succeeded during the present year in getting introduced into that country, which was until recently a "closed nation," several of their smaller engines, and also some two-horse and three-horse engines. Last year, or within a recent period, this international trading would have been an abomination to the Celestials, and the venturesome trader who had taken such a liberty with them would have enjoyed, supposing he was caught in the fact, practical experience of the manner in which decapitation in China is performed with the sword at one blow. Not only, however, did Messrs. Tuxford's English agents get through the attempt to introduce these engines, but they succeeded in turning the event into one of festivity and rejoicing. These engines were not only passed through the Imperial Chinese Customs at the port of Peking, but they were received with military honours to no less an extent than a salute of twenty-one Imperial guns! In the meantime, the engines were set to work, and chaff-cutters, mills, and other machinery were driven

in working order, to the great astonishment, and in some cases disgust, of the natives. In the present dull state of the home trade this is a charming event for English agricultural engineers, for which reason we have devoted some length to relating its main points. Some of these engines, and mills, were purchased by the Chinese Government, and others were taken by public officials high in authority.

John Fowler and Co. had their usual stand—*excepting steam-ploughs!* A cultivator with wings for working 16 feet wide was shown; and where land has been once broken up, this machine will certainly shift it again at a considerable rate per hour or day, if it be drawn four or five miles an hour. Their traction-engines were models of taste and skill, and the remarkable strength according to weight which is given them by the steel saddle for carrying the driving-shaft and gearing is not less valuable than the design of these saddles is elegant. The winding-drum, too, is now driven direct from the crank, at the end of which is fixed the bevel gearing for driving the spindle. In minor matters we may mention effective sand caps and collars now used on wheels, and a lubricator for regulating the flow of oil according to speed, which is a recent invention of one of their mechanics.

The Messrs. Clayton and Shuttleworth have too good a standing in their specialities to care for novelties. Their stand, however, was most imposing; and Mr. Burrell's, of Thetford, which was next, was quite up to its usual excellence.

On Messrs. Howard's stand we found a novel application of a band-break to a horse-rake, whereby the rake was made so far self-acting, that a few pounds pressure on a lever to tighten the band, which encircles the box of the wheel, causes the teeth to rise rapidly for emptying themselves. On this stand there was also the tubular boiler above referred to, and the usual stock of Messrs. Howard's famous implements which have so long been before the public.

An improved knife-connecting rod, working on a steel bar in the centre of the reaper, is shown by the Beverley Waggon Company. This is so much simpler than the usual appliances, that this Company can now reduce the price of their reapers £5. A self-acting reaper was also shown.

The stand of Messrs. Ransomes, Sims, and Head need but little description, as the character of their general articles and specialities is so well known, that to enter into details would detract, rather than not, from their world-wide reputation. Two grubbing tines attached to one of their strong ploughs is, however, a serviceable application for many purposes, or when the subsoil wants moving and not turning uppermost.

Other firms of more local celebrity, whose manufactures are so well known that they would not be made more popular if discussed at length, will be found in a list below as having been present with their usual stand. Ascending the gallery we come almost at once upon Walter A. Wood's unsurpassed American mowers and reapers; and as these are now made in light iron frames, they are as attractive to look at as they are effective in the corn or grass field.

Messrs. Amies and Barford were just round the corner, "going with the sun," and here they exhibited a model, one-third size, of Campain's self-acting anchor for steam cultivation. Amongst its merits over other anchors is one which consists in its being self-moving when a simple catch is raised from one of the four notches in a disc at the end of the tumbling bar. This process is simply as follows: The hind bar of the frame is made for revolving; on each side of this bar are fixed two or three tines which point into the ground as the anchor proceeds and the shaft turns. As one set of tines enters, the other is working out and rising to come round again in turn. If four

needles be stuck sidewise through a cork, and another be passed through from end to end, and an attempt be made to press this cork and needles over a soft surface, by pressing it forward with two fingers on the top, the powerful effect of this anchor may be subsequently imagined. Two or three times are used, according to the hardness or the softness of the soil, and their length or "pitch" is regulated for suiting similar conditions. As this anchor is drawn forward by the rope which draws the cultivator, working round a pulley in the centre, half the draught is forward and half sideways, or the whole of the draught is towards the corner, which is next the plot of land to be worked. This divided forward and side draught or pressure towards one corner is the explanation as to why so insignificant looking an apparatus is capable of preserving its position when so lightly weighted against the full working power of a ten or twelve horse engine. Mr. Campaign, who is a practical farmer, and knew what value this anchor would be if he could get it to work, calculates that a very large saving of labour will be practicable with this anchor, and, also, that more work can be done per day by 10 per cent., as none of the delays occur which often happen to the common anchor. Indeed, only the same number of hands is now required to work the round-about system with this anchor, as is required for the direct system.

A notice of some other inventions and improvements want of space compels us to defer. The following is a complete list of the exhibitors:—

DOWNSTAIRS DEPARTMENT.

KINSEY, NORTON, HILL, AND CO., Nottingham.—Six and eight-horse power horizontal and vertical steam engines; improved saw bench; and Kinsey's patent twelve-horse boiler.

BOBEY AND CO., (Limited), Lincoln.—Eight-horse power traction steam engine; four and six-horse power vertical engines on patent "field" boilers; thrashing and finishing machine; straw elevator; and improved corn mill.

WALLIS AND STEVENS, Basingstoke.—Eight-horse power portable engine; four-horse power colonial thrashing machine; combined finishing and thrashing machine; patent corn screens; sets of harrows; gear plough; and spherical bearings.

GARRETT AND SONS, Leiston Works, Saxmundham.—Improved eight and ten-horse power self moving agricultural steam engine; six, seven, and eight-horse power improved portable agricultural steam engines; ten-horse power steam cultivating engines; six and eight-horse power thrashing, dressing, and finishing machines; Haye's straw elevator; improved continuous iron framed stone grinding mill; Suffolk lever corn and seed drills; fore-carriage drill steers; lever horse hoes; manure drills and distributors; field and barley rollers; lever dragrakes; chaffcutters; corn winnowing and dressing machines; and improved rick and grain ventilators.

HORNBY AND SONS, Grantham.—Eight-horse power patent portable steam engine; combined thrashing machines; governor and progress self-raking reapers; "Paragon," "Premier," "Manchester" mowers; and combined; mowers and reapers; rotary corn screen, turnip cutters, root pulpers; "Excelsior" turn-wrist and other ploughs; improved dressing machines, and reaper knife, holders and sharpeners.

BARROWS AND STEWART, Banbury.—Eight-horse power portable steam engine; drum thrashing machine, with Penny's screw; 4ft. 6in. cattle crib; india rubber and leather endless driving bands; and lever and screw lifting-jacks.

TASKER AND SONS, Waterloo Iron Works, Andover.—Six and eight-horse power portable steam engines; combined thrashing machines; corn dressing machines; and model of patent straw elevator.

TUXFORD AND SONS, Boston.—One, two, three, four, and ten-horse power improved horizontal cylinder portable steam engines; ten-horse power patent house-steeped engine, with two cylinders; combined thrashing and dressing machines; and improved centrifugal pumps.

FOWLER AND CO., Steam Plough Works, Leeds.—Ten and fourteen-horse power steam-ploughing engine; eight-horse power traction engine, on springs; turnip harrow, for steam work; and cultivator.

CLAYTON AND SHUTTLEWORTH, Lincoln.—Eight-horse power portable steam engine; ten-horse power double-cylinder engine; ten-horse power double-cylinder traction engine; four-horse power "self-contained" and horizontal fixed engines; finishing-thrashing machines; improved saw-bench and boring apparatus; complete "self-contained" double corn mill; Gillyatt's patent two-row combined liquid-manure and turnip drill; sets of adjusting blocks; sack-lifting harrows; lifting jacks; and rolled-steel beater plates.

NALDER AND NALDER (Limited), Chillow Iron Works, Wantage.—Combined finishing-thrashing machine.

BURRELL, St. Nicholas Works, Thetford.—Eight and twelve-horse power single-cylinder traction engines.

UNDERHILL, Newport, Salop.—6-horse power finishing-thrashing machine; patent elevator and corn dresser; wrought-iron cultivator; ploughs; shaft-side delivery for manual-delivery reapers; chain corn drill; cheese press; and horse rake.

HUMPHRIES, Pershore.—Combined double-blast finishing-thrashing machine.

HOWARD, J. AND F., Britannia Iron Works, Bedford.—Twelve-horse power steam ploughing and traction engine, with cultivator and apparatus complete; set of patent steam-cultivating apparatus complete; sets of patent steam harrows; assortment of Champion, Anglo-American, double-furrow, rigging, and other ploughs; sets of sig-zag, drag, chain, and jointed harrows; horse rakes; patent haymakers; moving machines; self-acting delivery reaper; sets of whippletrees; and patent safety boiler.

HOLMES AND SONS, Prospect Place Works, Norwich.—Nine-horse power double-speed traction engine; eight-horse power prize portable steam engine; combined finishing and single-winner thrashing machines; seed sheller; circular-saw table; large and small corn dressers; corn, seed, and manure drills; barley hummeller; manure distributor; and corn and seed sowing machines.

THE BEVERLEY IRON AND WAGON COMPANY (Limited), Beverley.—"Royal Leicester" prize self-cleaning clod-crushers and field-rollers; new one, two, and three-horse reapers and mowers; "Royal Newcastle," "Leeds," "York," and "Plymouth" prize one and two-horse carts, with harvest ladders, frames, raves, shelving, &c., complete; liquid-manure distributors and water and manure carts; "Royal Plymouth" prize waggon for three or four horses; lorry, drag, or rully, with patent axles; sets of patent waggon and cart wheels and axles; prize double-roller bone mills; portable farm-railway and trucks; root crusher; turnip cutter; and new oilcake breaker.

TURNER, E. R. AND F., St. Peter's Iron Works, Ipswich.—Four, five, six, seven, eight, and 10-horse power portable steam engines; thrashing, winnowing, and dressing machines for four, five, six, seven, and eight-horse power, with steam engines; corn, seed, and malt-crushing mills for hand, horse, and steam power; bean and malt mills, portable grinding mills, oilcake breakers, chaff-cutters, gear work for pony, and horse power with intermediate motion; and maize and Indian corn sheller.

AVELLING AND PORTER, Rochester.—Twelve-horse power (nominal) winding engine for steam ploughing; eight-horse power agricultural locomotive engine; and travelling rope-porter.

EDDINGTON, A. AND W., Chelmsford.—Improved twelve-horse power steam traction, ploughing, and draining engine; seven-horse power portable engine; water and liquid manure cart; pump with hose, &c., complete, and patent strap fasteners.

ALLCHIN AND SON, Globe Works, Northampton.—Three and six-horse power portable steam engines; assortment of coils of improved India-rubber cotton endless driving-bands and suction hose; leather driving bands; and set of six iron screw jacks for portable engines and machines.

RANSOMES, SIMS, AND HEAD, Ipswich.—Two eight-horse power portable steam engines; portable steam finishing-thrashing machines; patent rotary self-cleaning adjustable corn screen; assortment of Newcastle and Leicester patent prize ploughs for every description of work; Biddell's patent bean cutters and mills; improved oilcake breakers; root pulpers; single and double-action turnip-cutters; and Biddell's patent Cam and other chaff-cutters.

ASHBY AND JEFFREY, Stamford.—Two, four, and six-

horse power vertical and portable steam engines, complete; "Palmerston" haymaking machine, improved extra large horse rake, patent wheel hand rakes; assortment of chaff-cutters, for hand, horse, and steam power; bean, oilcake, and stone grinding and crushing mills; single and double-action turnip-cutters; root pulpers; pair of wrought iron wheels and axles; rotating harrows; and pony, mule, or donkey rakes.

WOODS, COCKSLEDGE, AND WARNER, Suffolk Iron Works, Stowmarket.—One, two, three, four, six, and seven-horse power vertical steam engines; assortment of corn-grinding, universal roller, crushing, bean, pea, malt, linseed and other mills, for hand, horse, and steam power; patent root pulpers for hand or horse power; single and double-action turnip-cutters; chaff-cutters, oilcake breakers; one, two, and four-horse gear; two-horse portable thrashing machine; horse-power water pump; barley aveller; agricultural saw bench; weed extirpator; improved general purpose and other carts, complete; asphaltum apparatus; and patent hog troughs.

RUSTON, PROCTOR, AND CO., Lincoln.—Two-and-a-half, eight, ten, and twelve-horse power single and double cylinder portable steam-engines; four and six-horse power vertical steam-engines; thrashing and finishing dressing machine, patent straw elevator, corn grinding mill, Woodford's patent centrifugal pump, and circular self-acting saw benches.

THE READING IRON WORKS (Limited), Reading.—Twelve-horse power double cylinder portable engine; three, six, and eight-horse power portable engines; eight and twelve-horse power fixed engines; combined finishing-thrashing machines; circular saw bench, with boring apparatus; "clipper" mowing machine, with reaping attachments; improved lever horse-rake, corn drills, patent gear for horse power, chaff-cutters, crushing and oilcake mills, and broadcast seed machine.

MARSHALL, SONS, AND CO., Britannia Iron Works, Gainsborough.—Six and eight-horse power portable steam-engines, eight-horse power horizontal fixed engine, three and four-horse power vertical engines, thrashing and finishing-dressing machines, improved grinding mills for steam power, circular saw benches, screw-jacks, cranes, and set of adjusting blocks.

GIBSON, P. AND H., Wantage, Berks.—A portable combined thrashing machine.

BROWN AND MAY, North Wilts Foundry, Devizes.—Two-and-a-half and eight-horse power portable steam-engines.

CROSSKILL AND SONS, Beverley.—Improved clod-crushers and field-rollers; strong and light general work, pony, harvest, and liquid manure carts; improved three ton pair-horse waggon, twenty-five and thirty cwt., wheels and axles, Bell's three-horse reaping machine, single and double roller, bone mills, farm portable railway and trucks, pig troughs, and root crusher.

TIZ, St. Marks' Iron Works, Lincoln.—Single and double mills, smut machine, millstones, and mill utensils.

THE GALLERIES.

WILLIAMS AND CO., London.—Patent "Archimedeon" lawn mowers.

HOOPER AND CO., Covent Garden.—Seed potatoes.

PERCE, London.—An assortment of barrows and garden engines, pumps, corn bins, cattle troughs, chaff-cutters, and general farm, domestic, and dairy utensils.

PERRY AND CO. (Limited), Lincoln.—Flour-dressing machine, adjustable rotary corn-screens; malt, lime, gravel, and coal screens, sack lifters, and rolls of galvanized wire netting.

GIBBS AND CO., Half-moon-street, London.—Collection of dried natural grasses; specimens of approved kinds of wheat, barleys, and oats in the ear; growing samples of meadow and lawn grasses; collection of agricultural seeds generally; and large assortment of agricultural roots.

ARNOLD AND SONS, London.—Varied assortment of veterinary instruments and utensils.

WHEELER AND SON, Gloucester.—Collection of roots and seeds.

HARDON, Manchester.—Samples of condimental food and patent cake.

GIBBS AND CO., Down-street, London.—General collection of agricultural roots, dried grasses, wheats, barleys, oats, and various agricultural seeds.

UNITED, London.—Model of thirty-load rick-cloth; assortment of waterproof cart, load, and other cloths; samples of sacks, nose-bags, halters, and reins, netting, and rope; and model of marquee for agricultural shows.

DAY, SON, AND HEWETT, Baker-street, London.—A large collection of stockbreeders' medicine chests and medicines essential for ready use in the farm-yard and stable; and pamphlet essays on "Farriery," "Breeding and Management of Sheep," "Rearing of Calves," and "Milk Fever in Cows."

RAYNBIRD, CALDECOTT, BAWTREE, DOWLING, AND CO., Basingstoke.—Collection of agricultural seeds, roots, grasses, feeding stuffs, and artificial manures.

WRIGHT AND SON, Great Bentley, Essex.—Samples of agricultural seeds, roots, and grasses.

ALWAY AND SON, London.—Improved milk cooler, variety of churns, and general dairy utensils.

DUFFIELD, London.—Variety of butter prints, beaters, knives, and moulds for private or dairy use.

WHITE AND CO., London.—Patent artificial dams, for feeding foals, calves, or lambs; assortment of oil-feeders, lubricators, and save-all oil-cans.

FOX AND CO., London.—Rolls of galvanized wire netting for various service; cattle, poultry, and ornamental fencing; screens, sieves, water-tanks, and liquid-manure pump.

BELLAMY, Millwall.—Wrought iron painted and galvanized cisterns, to hold from fifty to six hundred gallons; corn bins, cattle troughs, wrought iron cart bodies, funnel for engine use, and galvanized oil tank for engine use.

BEACH & CO., Dudley.—Farinaceous food for cattle, sheep, and pigs; and condiment for horses.

CORBETT, Shrewsbury.—Bury prize patent "Eclipse" winnowing corn dressing machines, and model of sheep rack.

CRANSTONE, Hemel Hempstead.—Portable grindstones for reaper knives.

DAVIS, London.—Samples of new cattle food, and compressed forage, bran, and hay.

ARMSTRONG, Penrith.—Sets of light, heavy land, and general purpose harrows.

LARKWORTHY & CO., Worcester.—One and two-wheel iron ploughs; sets of patent "Excelsior" drags and harrows, wrought iron cattle cribs, and combined racks for feeding sheep.

ALLNUTT, London.—Copies of "Estates Gazette" newspaper, and specimens of books, &c., relating to agricultural subjects.

VALLANCE, Greenwich.—One-horse power gas-engine.

THE AGRICULTURAL AND HORTICULTURAL CO-OPERATIVE ASSOCIATION (Limited), Manchester.—Samples of linseed and other cakes, artificial manures, and agricultural seeds; cattle, sheep, and poultry fencing; sets of improved wrought iron hurdles, and wrought iron farm gate.

CORBETT & SON, Wellington, Salop.—Prize two-and-a-half horse power vertical oscillating steam engine; hand and power grinding mills, pulpers, turnip cutters, and chaff cutter.

DODGE, London.—Assortment of india rubber bolts, machine bands in various lengths, suction hose, waterproof covers, asphalt roofing felt, and greenhouse and garden hose pipes and fittings.

THE DRIFFIELD AND EAST RIDING PURE LINSEED CAKE COMPANY (Limited), Driffeld.—Samples of pure linseed cake.

EAGLES, London.—Four-horse combined vertical boiler and engine; one, two, and three-horse horizontal engines, and patent epicycloidal pulley-blocks.

FERGUSON, London.—Slate cattle-trough, manger cistern, and milk cooler.

ATMOSPHERIC CHURN CO., London.—Clifton's patent atmospheric churn in various sizes, patent milk coolers, revolving milk racks, enamelled iron milk pans, and other dairy utensils; and Talbot's specific mixture for sheep, lambs, and calves.

COOKE AND CO., Lincoln.—New patent colonial and general purpose ploughs, and assorted share ploughs.

THE GUTTA PERCHA CO., London.—Gutta percha bands in various widths for agricultural machines, tubing and suction hose, shovels, probangs, buckets, measures, watering-cans, and carbons.

BROWN AND CO., London.—Samples of oil-feeders, lubricators, belt-fasteners, stable lanterns, and lubricating oils.

HARRISON AND SON, Leicester.—Collection of agricultural roots, grass seeds, agricultural seeds, dried natural grasses, various kinds of potatoes.

LYON, London.—Machines for pulping roots, and for eating meat and biscuits; churns for making from two to ten pounds of butter.

EDDINGTON AND CO., London.—Tarps, canvas, and waterproof waggon and cart covers; driving bands, sheep netting, sacks, and nose-bags; and samples of guano, artificial manures, wheel grease, and engine oils.

CARTER AND CO., London.—Specimens of agricultural roots, seeds, and grasses.

HARE AND CO., London.—Specimens of electro-printing blocks for illustrating catalogues, and case of proofs of illustrations.

EDGINGTON, London.—Cart, waggon, and rick tarpaulins and cloths, nose-bags, sacks, garden netting, &c., and model of marquee for agricultural or other shows.

KING, Coggeshall, Essex.—Agricultural roots.

KING, London.—Canvas and other hay covers, stable cloths, sacks, waggon, and cart sheets and covers, leather head stalls, and horse clothing, netting, sheep-washing aprons, and canvas horse and cattle cradles.

SUTTON AND SONS, Reading.—Large collection of natural grasses, agricultural roots, and seeds, potatoes, carrots, turnips, and onions, suited to garden or farm cultivation.

OWENS AND CO., London.—Improved double-action steam pumping engine; Bernay's patent centrifugal pumps; collection of pumps for domestic use; cart and manure pumps, Caseobury garden engine, and extinguisher; farm fire engine; boring tools, hydraulic ram, and set of model rams.

COTTAM AND CO., London.—General collection of stable fittings and utensils, and model of stable.

HANCOCK, F. AND C., Dudley.—Various sizes of Hancock's patent machines for purifying butter for domestic and dairy use.

CULLINGFORD, Stratford.—Rolls of cocoa-nut fibre and hemp, sheepfolding and garden-net, wire netting, waggon cloths, and poultry fencing.

TINKLER, Penrith.—Patent churns to make from ten to forty lbs. of butter.

BURNBY AND CO., Millwall.—Wrought-iron cisterns to hold from one hundred to six hundred gallons; wrought-iron water and manure cart bodies; wrought-iron cattle troughs; movable trough on wheels; strong hog trough; and strong corn bins.

WEIR, London.—Farmer's patent cooking boiler, fitted with steamer for potatoes, roots, &c.

BARTON, London.—Portable stable, and sets of stable fittings and utensils.

HANCOCK, Birmingham.—New haymaking machine, new horse clipper, and machines for purifying butter.

COULTAS, Grantham.—Prize general purpose corn liquid manure, root, and mangold drills.

BALL, North Kilworth.—One-horse cart for general purposes.

TREE AND CO., London.—Cattle ganges, farmers' slide rules, draining levels, barometers, thermometers, horse standard, and horse clipper.

FARDON, Leighton Buzzard.—Six-horse power horizontal steam-engine; one-horse power "Vandyke" thrashing machine; steorage drills, chaff cutters, Turner's patent cultivator, ploughs, and oilcake mill.

GILBERT, Shippin, Berks.—Eleven-row improved Suffolk corn drill, with seed-box to attach.

NEIL, HARRISON, AND CO., London.—"Eureka" smut and separating machine, and "Excelaior" bran duster.

NORTON, London.—Norton and Bowyer's patent wheat cracker; Mortlock's millstone, dressing, and levelling machines; Norton's Abyssinian tube well and pump complete; and Hawksley's patent cottage pump.

POWIS, London.—New patent endless band sawing machine, complete.

WINDER, Farningham.—Machine for folding sheep, where netting is used, with iron standard, extra roller, and wooden trough for tarring the netting.

TRIGHER AND SMITH, London.—Patent circular rick-cloth or cover.

TRELOAR, London.—Netting, stable brushes, nose bags, mats, rick and cart covers, and cocoa-fibre manure.

LOYD AND SONS, London.—Flour dressing mills for hand, horse, and steam-power; corn crushers, corn and linseed grinding mills, drug mills, and portable corn grinding mills.

BROWN AND CO., London.—New lawn mowers in various sizes; galvanized wire netting for cattle, sheep, poultry, &c.; ornamental and garden trellis wire and portable fencing; wrought iron hurdles, iron standards, and straining pillars.

CORNER AND CO., Barbridge Works, near Nantwich.—Chaff-cutting machines for hand and power.

WILDERSTIN, Elsworth, Cambs.—New patent self-acting horse rake; and improved lever cultivator, scarifier, and grubber combined.

PARHAM, Bath.—Specimens of strained wire fence, with standards and straining pillars, pairs of wrought iron ornamental and park gates; ornamental railway for park or lawn, and model of improved iron orchard house.

HUGHES AND SONS, London.—Specimens of French runner mill and bed stones; smut machine, provers, stone staff, brushes, blocks, corn measures, sack barrows, driving bands, wire, lifting jacks, mahogany and cylinder grindstone and frame, lard oil, oil feeders, and other mill necessities.

PRENN, Braintree.—Root pulpers and graters, oilcake breaker, chaff-cutter, ploughs, hoe, and round p g troughs.

DENTON, Wolverhampton.—Assortment of chain harrows, patent adjustable harrow, disc roller, and vice for reaper knives.

LANE, London.—Two-and-a-half, four, and six-horse power steam engines, with fly-wheel complete.

HERBERT, London.—Variety of weighing machines and scales, suitable for farm service; sets of weights, sets of corn and seed measures, sack barrows, knives, choppers, and axes.

TANGY BROTHERS AND HOLMAN, London.—One, two, four, and six-horse power horizontal high-pressure steam engines, "Special" steam pumps, and bundle of improved steam suet lubricators.

HEAD, WRIGHTSON AND CO., Stockton-on-Tees.—Moore's patent pulley blocks and chain.

ROSEB, F. AND G., London.—Samples of stable-pavings, bricks, tiles, garden border edgings, drain traps, sinks, roofing for farm buildings, and agricultural drain pipes and tiles.

SMITH, Foston, near Hull.—Patent self-feeding sheep rack, and improved hay rack.

JOHNSTON, London.—Butter churns, to make from one to thirty pounds, milk pails and pans, and other dairy utensils.

SPRATT, J. AND CO., London.—Samples of pure fibrine biscuits for dogs and horses, and farina meal for horses, sheep, and pigs.

TIPPER, Birmingham.—"Medicated mystery" for horses, cows, calves, sheep, pigs, and poultry; shepherd's black oils, and waterproof blacking.

AMIES, BARFORD, AND CO., Peterborough.—First-prize corn grinding mills, oilcake mills, farmer's steaming apparatus, Camplin's patent steam anchor, portable boiler and steamer, field garden rollers, and model of patent hay and straw elevator.

BURGESS AND KEY, London.—Mowing machines for one and two horses; combined reaping and mowing machines; and reaping machines for sheaf and swathe delivery.

THE TANNED LEATHER CO., London.—Rolls of leather driving-traps in various widths; hose, laces, oil tester, patent test, and powerful fire pumps, steam gauge, tallow cup, speed indicator.

SALMON, London.—Samples of various artificial manures for root culture, &c.

SIMPSON AND CO., London.—Packets and samples of cattle spice.

MARKALL AND SON, London.—Machine for sawing and boring.

SMITH, Kettering.—Horse hoes, grindstones for reaper and mower, knives, and general purpose grindstones.

NICHOLSON, Newark.—One, two, and three-horse power steam engines, patent haymakers, new horse rake, winnowing machine, corn elevator, cake mills, for hand and power, sack lifters, and new patent corn-drilling machine.

MURRAY AND CO., Banff, N.B.—Corn drill sowing machine, combined double furrow and subsoil plough, improved chain pump, and set of zig-zag harrows.

MILBURN AND CO., London.—Portable corn-drying machine, and samples of desiccated grain food for cattle.

MAIN, London.—Specimens of patent continuous fence, field gates and pillars, ornamental wire hurdles, and rolls of galvanized wire netting.

SAMUELSON AND CO., Britannia Works, Banbury.—Self-raking reaper, combined reapers and grass mowers, one-horse "Eclipse" mower, single and double action turnip-cutters, and lawn mowers.

YARROW AND HEDLEY, London.—Three-and-a-half and five-horse power improved steam-engines.

HOFF, Wellingborough.—Samples of cattle, game, and poultry food in bags and boxes.

MURTON AND TURNER, Kenninghall, Norfolk.—Corn-dressing machine, twelve-row corn and seed drill, and six-hand turnip mending drills.

NORRIS AND CO., London.—Rolls of leather belting and bands, fire-hose, buckets, laces, band-screws, and boxes of Buer's patent packing.

RANSOME AND CO., London.—Weston's patent pulleys and sack hoists, sets of rope-blocks, lifting jacks, leather driving bands, steam gauges, weighing machines, grindstones, corn and flour bins, steaming apparatus, rick ventilator, and samples of sheep-dipping specific.

PRIEST AND WOOLNOUGH, Kingston.—Assortment of Norfolk, Suffolk, Surrey, manure, and general purpose drills; patent lever horse-hoes, and patent barrows.

BENTALL, Maldon.—Assortment of patent chaff-cutters, root-pulpers, slicers, single and double action turnip-cutters, oilcake mills, corn and seed crushers, two-horse gear and thrashing machine, ploughs, sets of two and four harrows, and set of two-horse whippetrees.

BRITANNIA STEAM CULTIVATOR COMPANY, Leeds.—Model of Fiken's light rope steam-ploughing tackle.

SHEN, Aylesbury.—Chaff-cutters for hand, horse, and steam power; oilcake breaker, litter and turnip cutters, and tin shovels.

MATYARD, Whittleford Works, near Cambridge.—Patent portable power engine, for cutting chaff, &c.

HUPBURN AND SONS, Southwark.—Single and double endless bands, wire-sown; leather belting, leather hose and buckets, and india-rubber bands, delivery suction hose, &c.

GRAY, Sheffield.—Steel and steel-faced horse-shoes; knives, sections, and fingers for reaping and mowing machine; ploughshares and coulters, chaff-machine knives, turnip-cutters, and various edge tools for farm and garden use.

LEX, Witleham, Surrey.—Woodbury's straw-frame beehives, Taylor's improved cottage hives, Payne's improved hives, centrifugal honey-extracting machine, and collection of honey in glass boxes.

MORISON, London.—Patent hay presses for country districts.

PERKINS, Hitchin.—Pairs of three, four, and five beam harrows; and poles for reaping and mowing machines, with shaft and starting and stopping motion complete.

TAYLOR AND CO., London-bridge.—Improved chaff-cutting machines; crushing mills, pulpers, and slicers; grindstones; improved winnowing and blowing machine; oilcake breakers, portable boiler for farmers' metallic corn bins, American box churns and turnip cutters.

RAY, MEAD, AND CO., London.—Two-and-a-half, three, and four horse-power steam engines, boiler, and fittings complete; corn bins, galvanized iron wheelbarrow, and grindstone mounted on iron frame.

BOY, Bury St. Edmund's.—Patent double-action haymaker; patent self-cleaning corn screen and stone separators; patent corn-dressing machine and screen combined; barley haweller; patent semi-self-acting horse rake; improved malt, gravel, and lime screens; pair of patent plough wheels and stalks; model of wire maltkiln floor, and small screen for corn merchant's office.

WHITNEY AND CO., London.—Corn crushers and grinding mills; portable French burr mills; domestic flour mills, chaff cutting machines, and flour dressing machines.

HOLGATE AND CO., London.—Leather and indiarubber millbands, hose pipes, and buckets.

HILL AND SMITH, Brierley-hill.—Wrought iron sheep racks, cattle cribs, sheep troughs, wheelbarrows, field and entrance gates and pillars; specimen lengths of continuous cattle and sheep fence; samples of wrought iron hurdles; and samples of galvanized and painted wire netting.

HAYWARD, TYLER, AND CO., London.—Two and eight horse power horizontal steam engine; two-horse power vertical engine; Jordan's combination steam boiler for horse power; patent universal steam pumps; irrigation pump; California farm fire engine and pumps; assortment of pumps for power, domestic, and agricultural service; and water barrows and garden engines.

WORSWOM AND CO., London.—Circular saw table for agricultural purposes only.

REID AND CO., Aberdeen, N.B.—General purpose corn and seed drills, single-wheel fore-carriage steerage; improved

marker, and land measure for corn drills; horse rake, set of medium harrows, and double-action wire-straining pillar.

HEADLEY AND SON, Cambridge.—Assortment of new hydraulic apparatus for watering roads and extinguishing fires; rolls of pipe, portable hand pump, and cattle trough.

COTTIS AND SONS, Epping.—Chaff-cutters for hand and horse power; expanding and market gardeners' horse-hoes; dressing machine; set of zig-zag harrows, and barrows.

SMYTH AND SONS, Peasenhall.—Ten-row "Eclipse" and lever corn drills, and manure drills.

JONES, Gloucester.—Gloucestershire Specific for Sheep; composition for waterproofing; and chemical essence for wounds in animals.

EASTWOOD, Blackburn.—Compound action churns, to hold from one to twelve gallons; and one two-horse engine with governors for churning or chaff-cutting.

MATTHEWS, SON, AND CO, Driffield.—Samples of corn feeding cake.

HANDLEY AND CO., Stepney.—One pair of French mill stones, smut machine, and collection of mill necessities.

GOODAY, Chelmsford.—The patent thatch sewing machine.

DAVEY, Croftthole, Cornwall.—Two patent "Excelsior" turnwrest ploughs.

THE FARMERS' SUPPLY ASSOCIATION (Limited) London.—Samples of lined cakes, cattle foods, artificial manures, and agricultural seeds.

STONES, London.—Rolls of wire winnowing machine work, corn, manure, and other sieves; screens, netting, and sack protectors.

VULCAN IRON WORKS CO., Ipswich.—Newly improved self-acting horse-rakes, cultivators, sheep-feeding racks, and agricultural cart.

BOULTON, Norwich.—Liquid manure carts, water and liquid manure barrows, improved machine for spreading liquid manure, garden engines, portable and domestic pumps, new patent lawn mowing machine, assortment of garden chairs, vases, game and sheep netting, and two models of green-houses.

HART & CO., London.—Weighing machines for agricultural and general purposes.

KEARSLY, Ripon, Yorkshire.—Two-horse grass mower, and one-horse reaper.

FOSTER AND SONS, Witham, Essex.—Chaff-cutter, oilcake breakers, turnip cutters, beam mills, cattle troughs, sack barrow, and heavy bottle jack.

FOLLOWS AND BATE, Manchester.—Assortment of lawn mowers, portable stand for reaper knives, grindstones, Manchester powerful pump, and weighing machines.

WOOLF, Bedford.—Improved general purpose plough.

WAIDE, Leeds.—Barrel churns, to make from $\frac{1}{2}$ to 40 lbs. of butter.

TROWBRIDGE, London.—Agricultural weighing machines scales, and weights; and set of seed measures.

KITMER, Fulstow, Lincolnshire.—Corn dressing and blowing machine, and combined dressing and blowing machine.

HUNT AND PICKERING, Leicester.—Steel roller corn-crushers, grist mills, oilcake breakers, chaff cutters, root pulpers, one-horse gearing, turnip cutters, one and two horse mowers and reapers, models of liquid manure cart and cultivator, pair of 4ft. millstones, roller punches, and model of vessel for the transit of milk.

HODGSON, Louth, Lincolnshire.—Sets of harrows, bundles of digging and manure forks, general purpose plough, and corn hoe and scarifier.

GIBBS, Woodford, Essex.—Models of patent hay and wheat dryer, and specimens of dried hay.

REEVES R. AND J., Bratton Iron Works, Westbury.—Chandler's and economical liquid manure and seed drills, thirteen-coulter seed drill, broadcast manure distributors, improved water carts, and harrow pumps and pipes.

HILL, Westbury.—Specimens of agricultural seeds and roots.

REYNOLDS, London.—Poultry fencing, hurdles, coops, poultry troughs, seed protectors, and galvanized wire netting.

CARSON AND TOONE, Warminster.—Chaff-cutting engines, patent turnip-cutters, oilcake crushers, horse hoe, cheese presses, and two-horse gear.

BAKER, Compton, Berks.—Liquid manure cart, pump with suction hose, improved manure distributor, and water cart on wood wheels.

RICHES AND WATTS, Norwich.—American grist mills, "Eureka" grinding mills, "Star" grinding and crushing mills, manure pumps and distributors, cider mill and wine presser, lever drag rake, sheep rack, horse works, oilcake breaker, American ploughs, Child's aspirator, California separator, chaff-cutters, dressing machine, and seed drill.

HAYES AND SON, Peterborough.—Manchester, Plymouth, and Paris Exhibition first prize one and two-horse carts and waggons.

LE BUTT, Bury St. Edmunds.—"Champion" double-action hay-making machines, patent corn and malt screes, collection of registered hand drills, humane hurdle for lambs, mower knife rest, and the perfect watering-pot.

WARREN, Maldon, Essex.—Chaff cutters for hand and power, oilcake mills, single action turnip cutter, iron and wood beam ploughs, horse rake, and wearing parts for ploughs.

SAWNEY, Beverley.—Prize winnowing machines, sheep racks, grindstones, sack holders and sack trucks, one-horse reaping machine, reaper knife stand, and sack elevator.

JAMES, Cheltenham.—Prize liquid manure distributors, with pumps and suction pipes complete, liquid manure pumps, bone crusher for hand and horse power, and an assortment of gapping drills.

WEDLAKE, Romford, Essex.—Three horse power portable steam engine, one and two horse gear patent haymaker, improved horse rake, chaff cutters, portable corn mills, and circular saw bench.

CAMBRIDGE, Bristol.—Patent and improved rollers, sets of Seamen's and chain harrows, winnowing machine sieves, three-wheel land presser, improved one and two horse gear, and improved horse rake.

BRYAN, CORCORAN, AND CO., Mark-lane, London.—Samples of French burr stones, French runner millstones and bedstones, smut and wheat cleaning machines, mahogany flour cylinder, model of silk flour dressing machine, weighing machine, cradle flour scales, stone staffs and prods, jack stick with spirit level, models of malt kiln, corn measures, chronometer, shovels, brushes, and large collection of miscellaneous articles and utensils required by millers.

HOBBS, Basingstoke.—Improved two-horse gear, chaff cutters, oilcake and bean mills, oat crushers, corn mills, sack elevators, and horse hoes.

BALL AND SON, Kettering.—Royal Agricultural prize waggons and carts, patent "Criterion" prize ploughs, improved leader scarifiers, and sets of iron chain harrows.

ROLLINS, London.—American self side delivery reaper, spring tooth wheel horse rake, American haymakers, thermometer churns, ploughs, corn sheller, sack weighing machines, hay forks, ox yokes, American scythe stones, force and other pumps, garden rakes and hoes, hydraulic rams, and garden and fire engines.

WOOD, London.—One and two-horse improved mower; two-horse combined mower and reaper; new one-horse reaper; and Nova Scotia grindstone for mowers.

HURST, Earle Colne, Essex.—Steam-power clover and trefoil seed drawer; one and two-horse power gear, with intermediate motion; corn and seed dressing machine; oilcake breaker; single-action turnip cutter; disc root pulpers; and turnip seed, clover, and grass drills.

PAGE AND CO., Bedford.—Chaff-cutting machines for hand and horse power; set of horse gear; linseed cake, bean, and oat mills; root pulpers; turnip cutters; and sets of harrows.

BAMLETT, Thirak.—Prize swathe-delivery reaper; one-horse reaper; two-horse grass mower; two-horse combined mower and reaper; and stand to sharpen knife bars.

CLAYTON, SON, AND HOWLETT, London.—Double-chamber drain-pipe, tile, and brick machine; patent brick die, self-delivery brick cutting table; hand-power brick press; concrete moulder; and various models of machines in connection with brickmaking.

THE ST. PANCRAS IRON WORKS, London.—General collection of stable furniture, fittings, and utensils, and sheep and cattle hurdles.

DELL, London.—Wheat cleaner, smut machine, and separator combined; smut machines; French-burr millstones; weighing machines; sacks, and trucks.

PICKSLEY, SIMS, AND CO. (Limited), Leigh, Lancashire.—Assortment of chaff-cutters, for hand, horse, or steam-power; turnip-cutters, strippers and sheers; oilcake, bean,

oat, and other mills; pony and horse gear, one-horse standard reaper, two-horse combined reaper and mower, two-horse standard mower, and new patent standard self-raking reaping machine.

BRADFORD, London.—Various sizes of Bradford's patent churns; improved box-churns; sets of improved butter utensils, pulley blocks, portable weighing machines, "Manchester" fire pump, and improved vertical steam boiler.

RICHMOND AND CHANDLER, Salford.—Variety of chaff-cutters for hand and power; assortment of corn crushers; newly improved one and two-horse gear, and steaming apparatus.

COLEMAN AND MORTON, Chelmsford.—Three prize cultivators; improved water or liquid manure cart with pump and distributor; hand water cart; oilcake cutters for hand or steam power; rotary corn screes; improved one-horse gear, patent horse pitchfork or elevator, and samples of shares for cultivators.

BAKER, Wisbeach.—Winnowing machines.

SMITH AND GRACE, Thrapstone.—Collection of grist mills of various power; bean, oat, and cake mills; and chaff-cutters.

BRAGGINS, Banbury.—Specimens of ornamental entrance and field gates, patent gate lock, and sample board of miscellaneous bolts and screws.

SMITHFIELD CLUB DINNER.

The annual dinner of the Smithfield Club took place on the Monday afternoon, at half-past four, in the large dining-room of the Agricultural Hall, His Grace the Duke of MARIOROUGH presiding. The attendance reached to about 100.

On the conclusion of dinner, the PRESIDENT rose and said the first toast that he had to propose to them was one which in an assembly of English gentlemen needed no comment. He should therefore, without further preface, simply ask them to fill their glasses, and to drink with all the honours the health of the greatest lady patroness of agriculture in this or any other country, her Most Gracious Sovereign the Queen (loud cheers, followed by three times three).

The PRESIDENT then said the next toast which he had to give was one of peculiar interest to that gratifying occasion. He had to propose the health of His Royal Highness the Prince of Wales, the Princess of Wales, and the rest of the Royal Family. They were reminded that Her Royal Highness the Princess had just presented her Royal Consort, and he might say the nation, with another pledge of affection; it was an event therefore which they must take peculiarly to themselves, as well as congratulate the Royal pair upon the happy circumstance (Hear, hear). But he needed no words to recommend to their acceptance the toast of His Royal Highness, because he had endeared himself to the country generally by his urbane and popular manners, and especially as regarded the interests of that Club. He had contributed very largely, and in the most public spirited manner, to the show which had commenced that day (Hear, hear). He asked, then, that they would join him in drinking congratulations to His Royal Highness and his very good health, with that of the Princess and the rest of the Royal family (cheers).

The PRESIDENT: It is now my pleasing duty to propose to you the toast which may be considered the toast of the evening, and I am sure that if ever a wish conveyed in a toast has been gratified, that which I now propose to you—namely, "Success to the Smithfield Club"—has been fully realised on this occasion. Year after year you have drunk "Success to the Smithfield Club," and year after year I think you have had abundant evidence that the wish has been amply fulfilled (Hear, hear). We have seen the Smithfield Club rising from its small beginnings, gradually developing itself, and increasing more and more in usefulness, in prosperity, and in the public estimation, until at last it has become one of the most important, if not the most important of the agricultural associations in the kingdom (cheers). I should scarcely place it in competition by the side of its sister institution, the Royal Agricultural Society of England, because, ante-dating as it does in its origin the origin of that Society, I hold this to be as the senior the more important of the two. Still, it is pleasing to think that there are two societies of this character, both conferring an equal benefit upon the population of this coun-

try; both traversing a road full of usefulness and of scientific improvement; and both adding year by year to the prosperity of the nation at large (cheers). In the Royal Agricultural Society we have an institution which promotes the breeding of animals all over the country, and in the Smithfield Club we have an institution which promotes and fosters their breeding and feeding, and their conversion to those uses which are most valuable to mankind. Well, gentlemen, I think I may say that our wishes have been fully gratified in this respect. The show of stock which we have seen to-day, those which have preceded it, and I have no doubt others which are to follow, all testify to the wisdom of those who originated the society, and furnish an example not only to ourselves, but to foreign nations how great we are in the production of the first necessary of life—namely, food (cheers). But let us not rest contented with the advances which we have hitherto made. There is still an enormous field for Englishmen and English agriculturists to occupy. When you consider the important problem of obtaining a supply of food for the vast population, the ever-increasing population of this country, it is no light thing to say that we have it in our power to occupy, and to fully occupy, that field. I should be the last person to say that you ought by any means whatever to restrict the importation of foreign cattle for the supply of the domestic wants of the people of England, or that you should by any artificial means enhance the price of that food which is the first necessary of life. At the same time I feel that we are embarked in a fair and an honourable field of competition, and when we reflect upon the enormous supplies of foreign food which come into the country, we may, I think, put before ourselves this proposition—that here we have a competitor in the foreigner, and that by means of improved modes of breeding, feeding, and increasing the quality of our stock we may occupy a considerable portion of the ground which has been conceded to him (Hear, hear). One thing which has struck me particularly in reviewing the operations of this society is, that I am satisfied, and I believe that most of the gentlemen who hear me will agree with me, that one of the principal elements in the prosperity of British Agriculture consists in the feeding of cattle (Hear, hear). This being so, it ought to be a matter of the greatest consideration with us how we can make that feeding of cattle more general throughout the country. It cannot, I think, be denied that to a great extent the feeding of cattle, of which we see the results in such exhibitions as that in the adjoining Hall, is carried on by persons of considerable means, who have devoted a large portion of their time and attention to the subject, but that it is confined to a comparatively small class. Now I do hope that in future years the effect of the operations of this society and of any new measures that may be taken to advance the object which we have in view, will be to make the feeding of cattle much more general (Hear, hear). I have in my eye, and I could name farm upon farm where I know the greatest possible benefit would be derived by the farmer, a man of limited means, if he could only be induced to feed four, five, or a half-dozen head of cattle; whereas, generally speaking, upon small farms the farmer confines himself to a small flock of sheep, because they require little or no trouble, whilst the feeding of cattle is comparatively, and in a great degree, neglected. I hope that in future we shall not restrict the operations of this society merely to the encouragement of scientific stock-feeding, which I admit is very beautiful to see, and of which we witness the results under this roof in the most perfect manner; but I should like to see steps taken to enlarge the area of this feeding of stock, and to make the British farmer of small means sensible to the great advantage to himself, to his landlord, and to the country of feeding a small quantum of cattle and sending it to our great markets for consumption by the population of this country (cheers). I will not detain you with any more observations of a practical kind; but echoing the sentiments with which I began, I am sure you will concur with me in drinking that which must be nearest to the hearts and wishes of us all—"Success to the Smithfield Club." [The toast was drunk with enthusiastic applause.]

The Honorary Secretary (Mr. BRANDRETH GIBBS) then read the Judges' award of the cups and champion prizes.

The PRESIDENT then called upon the company as an incumbent duty to drink the health of the winners, and wish them joy in the success they had so honourably gained. With the toast he connected the name of Lord Walsingham, and it was received with loud cheers.

On Lord WALSHINGHAM rising to return thanks the applause was renewed with increased vigour. His lordship said, I really feel overpowered by the kindness with which you have received me. I certainly do appear to have been extremely successful, but I take to myself very little credit for it, and wish the credit to go where it is due, namely, to the able and energetic men who manage my affairs, and have brought my flock to its present condition (Hear, hear). I came up to town this morning, with the knowledge that I had some pretty good sheep in the yard, and when I entered it I found myself awarded the first prize for each of the three pens which I had shown, a silver cup, and that other handsome prize which the society has given for the first time this year to the best animal of its kind (cheers). Regarding the show as a whole, I think the general opinion seems to be that it is a fair average one. There are certainly some very beautiful animals there, and, upon the whole, it is a fine exhibition of stock. In particular, I admire the row of Devons, which looks so fine and beautiful (Hear, hear). Now, gentlemen, in these times, when corn is cheap and meat is dear, it is of the greatest importance to the farming interest that we should have breeds of cattle and sheep that will produce the largest possible amount of mutton and beef with as little bone as possible; and, if we take the animals which we have seen here to-day as a type of the animals which are in every part of the kingdom, or at least in every county in the kingdom, I think we may fairly boast that Great Britain and Ireland possess a very large quantity of the finest stock that it is possible to produce (Hear, hear). I believe that even now, however, there is room for improvement, and that it is possible in the course of years, which I may not live to see, that the stock of this country will still very much improve (Hear, hear). There is one animal in the yard which is very different from those I have alluded to. I mean the animal which is described as a South American beast (a laugh). I think we may take him to be the type of a very different description—the type, in short, of what our stock would be if there had been no such institutions in existence as the Smithfield Club and the Royal Agricultural Society of England to stimulate the farmers of this country to produce such magnificent animals as they do (Hear, hear); and I fancy that it would take a good many more animals such as that to feed the large population of this kingdom (Hear, hear, and laughter). You have all had an opportunity of seeing him, and I hope that I have not formed a too unfavourable opinion of him (Hear, hear). Before resuming my seat, the order of the day being that we should not make long speeches, I may be allowed to propose a toast which I have the greatest pleasure in doing, and that is the health of our noble President, the Duke of Marlborough (loud cheers). I know that my noble friend takes great interest in farming, although he has not been able to exhibit anything at your show to-day; but the noble Duke, who has served his country as a Minister of the Crown so ably and so well, condescends to take an interest in matters which are perhaps not quite of the importance of those with which he has been conversant in that capacity, though of great importance to the general benefit of the community, and therefore I beg to give you the health of his Grace the President (prolonged cheering).

The PRESIDENT: It is with heartfelt sincerity that I thank you, not only for the honour you have been good enough to do me in drinking my health, but for the kindness and indulgence with which you accepted me as your president for this year. I confess myself to be only a new and recent member of the Club. Partly from circumstances which have prevented me from engaging earlier in the pursuit of agriculture, and partly from other causes, I have not been able to take that scientific and continued interest in farming operations and the feeding of cattle which has been the happy privilege of my noble friend Lord Walsingham and many gentlemen present, but I can assure you that it has not produced in me any less regard for or less sense of the deep importance of agriculture to this country. I have a very large stake in agriculture; my attention is constantly fixed upon an extensive farm of my own, and it has been a subject of much regret to me that it has not fallen to my lot on this occasion to be a competitor in your hall. That, however, is attributable to an accident which has occurred, and but for which I had fully intended to have offered a humble contribution to the beautiful show which we have seen to-day (Hear, hear). In expressing my acknowledgment to you it is also due from me to return my thanks to these members of the Council with whom I have been associated, and

from whom I have received the utmost co-operation and assistance. Believe me I shall always look back upon the year of my presidency as one of great honour and distinction. It is a subject of great gratification to me that the society is ending this year of its existence, and is about to enter a new one in a position of no less prosperity and importance than at the beginning of the year, and that in entering on the new year it will do so under the presidency of my noble friend Lord Powis, who is not less interested in agriculture, and who will bring to the conduct of the affairs of the Club an amount of intelligence that will make him acceptable to you, and ensure for the Club an equal if not a greater amount of prosperity than heretofore.

Lord DENMAN proposed the "Health of the president elect, the vice-presidents, and the trustees." He might safely say that the improvement of stock was the main object of every owner of land who had the interest of his tenants at heart; and from what he knew of the president elect, he might venture to predict that no Scotchman would be allowed to carry off the prize for Shropshire Downs another year without a severe struggle (Hear, hear).

Earl POWIS (the president elect), said I have to thank you on the part of the vice-presidents and trustees as well as myself for the honour you have done us. It is a source of great satisfaction to all the officers of this Club to see that the show commends itself year by year to those who visit it, and that it expended itself in importance and influence as soon as it obtained adequate room in this very fine building. I must congratulate you upon the success which has attended its removal eastward, and also upon that very excellent building in which we hold it as being of itself a monument of agricultural enterprise. I trust that, next year, when I have the honour of presiding over the Club I shall have the pleasure of meeting all of you again, and that every one will bring a comrade with him (cheers).

Mr. TORR, in returning thanks for the trustees, observed that all testimony concurred in declaring that the show was an excellent one. As an extensive breeder of Shorthorns himself he felt proud of the fact that they had carried off the two best prizes in the cattle classes (Hear, hear); but turning to the sheep he could hardly imagine the Leicesters and Southdowns coming into competition with each other on fair and equal grounds (Hear, hear). He had no doubt, however, that Lord Walsingham's pen of Downs had rightly won, and that Lord Berners' pen of Leicesters had rightly lost; still, if there were to be champion prizes for sheep he held that the Downs and Leicesters could not be put in competition. With regard to what the president had said on the subject of feeding cattle on small farms, he did not look forward to much being done in that respect for the present, and judging from the results of his own practice, he found that the feeding of sheep yielded a profit when he looked in vain for profit from cattle (Hear, hear).

Mr. J. CLAYDEN gave "The health of the judges," for whom Mr. W. H. KEARY (Bridgenorth), one of the judges of cattle, responded. He would like to take that opportunity of reminding the critics of the press that they should be somewhat tender in finding fault with the awards of the judges; they ought to bear in mind that whilst they saw through a telescope, the merits and defects were brought under the eyes of the judges through a microscope. The judges had the opportunity of looking minutely into every condition and aspect of the animals, whereas those public writers who only saw them in passing up and down the alleys of the show-yard, could only speak from a very cursory view, and so formed an imperfect judgment on the merits of the animals (Hear, hear). On the whole he congratulated the Club upon having a good average show. He would not say that he had not seen larger, and he certainly had seen better animals take the gold medals and higher prizes than those which had been successful that day; but the Club might be congratulated upon having fulfilled its mission of producing a large amount of food at early maturity. If they looked back to the shows of 30 years ago, when they were held in Goswell-street, he thought they would agree with him that the meat now shown upon animals three or three and a-half years old was a sufficient proof that the Club had fulfilled its mission (cheers).

The remaining toasts were the "Stewards" and the "Hon. Secretary," proposed by Mr. C. HOWARD, and responded to by Mr. PAINTER and Mr. BRANDRETH GIBBS; and "The Butchers," which was given by Mr. T. BOOTH. The company then separated.

ANNUAL MEETING OF THE SMITHFIELD CLUB.

The annual meeting of the members of the Smithfield Club took place on the Tuesday in the Agricultural Hall, and was well attended. The Chair was taken by the President, His Grace the Duke of MARLBOROUGH.

The Honorary Secretary, Mr. BRANDRETH GIBBS, after reading the minutes of the preceding meeting, which were confirmed, read the following:

REPORT, 1869.

The Council beg to lay before the General Meeting their Annual Report for the past year. The Council have held three Meetings, all of which have as usual been extremely well attended. In addition to the ordinary routine business of the Club, the following subjects have had their consideration:

The revision of the Prize Sheet for the present Show. The Council, considering that the Smithfield Club ought as the national society to offer sufficient inducement to exhibitors to send the finest specimens of different breeds to its shows, determined to offer, in addition to the regular premiums, a Champion Prize consisting of a Piece of Plate, value £100, for the best beast in the yard. This champion prize has been won by the Right Hon. the Earl of Aylesford, who thus takes for his shorthorned steer the following: The Champion Plate, value £100; the Silver Cup as the best in the classes, £40; the First Prize in its class, £30; and the Gold Medal to the breeder.

A similar Champion Prize, value £50, is offered for the best pen of sheep in the yard, thus bringing all the breeds and crosses into competition.

The winner of this is the Right Hon. Lord Walsingham, who takes as follows:—The Champion Plate, value £50, the Silver Cup for the best Pen of Sheep in the show, £20, the First Prize in the class, £20, and a Silver Medal to the breeder.

The Council, taking into consideration the great merit of many of the single sheep shown in the various divisions of Extra Stock, determined to carry out the same principle as regards a champion prize. A Piece of Plate, value £10, has therefore been offered for the best Single Sheep in the extra stock generally.

This has been won by Mr. Wm. Brown.

Several additions have been made in the Prizes for Devons, Herefords, Shorthorns, and Sussex. New Classes for two-year-old sheep have been added in the Hampshire or Wiltshire, and also in the Oxfordshire divisions. A Third Prize for the Ryland, Cheviot, and Dorset sheep has been given, and two Medals for Extra Stock sheep, Shortwools not Southdowns, viz., one for the best Wether, one for the best Ewe.

The following alteration was made in the rule respecting pigs, viz.:—

"That in place of the disqualification being final when the state of the dentition is not satisfactory, the following rule has been substituted:

"If the dentition shall indicate that the age of any of the pigs has been incorrectly returned in the certificates, the stewards shall call upon the exhibitor to prove to their satisfaction the correctness of his certificate."

In consequence of the large number of exhibitors who have been in the habit of paying the non-members' fees for the privilege of competing for prizes, thus only contributing to the funds of the Club in those years when they had animals to exhibit, the Council determined to raise the non-members' fee to Two Guineas.

The result has been an addition to the funds for the present show of £132 6s., whilst several old exhibitors have now become members of the Club.

In compliance with the Resolution of the General Meeting last year altering the bye-laws, the Judges have this year been appointed by the Judges Selection Committee from the list of nominations sent in by the Members of Council.

This Committee consisted of the President and Stewards of Live Stock.

The Council recommend to the General Meeting the following alteration in the bye-laws, viz., "That instead of a Council Meeting being held in March as required in the bye-laws, such meeting shall be held in February."

By this means matters standing over from the Show can be settled without unnecessary delay, and the Prize Sheet can be

issued at an earlier date. This will be a great convenience to those who are about to prepare animals for exhibition.

Attention having been called to the unsatisfactory state of the fittings of the sheep pens and the pig hurdles, the Council communicated with the Directors of the Agricultural Hall Company, who has caused an entirely new set of pig fittings to be constructed. By a fresh arrangement of the pens the drainage can now be properly regulated, and by a modification in the sheep fittings the large breeds of sheep are now provided with pens of increased size.

It having been found that a cold luncheon on the Tuesday of the Show was not well attended last year, and also that the former practice of having the Anniversary Dinner on the Wednesday was equally unsuccessful, the Council determined that the dinner should take place on Monday after the completion of the Judges' Award. The Council anticipated that large numbers of the members, exhibitors, and others taking interest in the Club would be in the hall on that day, and would therefore be likely to attend. The subject of the dinner will receive the attention of the Council at its next meeting.

The Lords of the Privy Council have again granted the special permission allowing animals exhibited at the Club Show to be removed beyond the metropolitan boundary. A Certificate, signed by one of the Club's Veterinary Inspectors, must be obtained, attesting that the animals to be so removed do not exhibit any indication of infectious or contagious disease.

The Council lay before the Meeting the Annual Audited Balance Sheet of the Club from the 1st December, 1868, to 1st December, 1869. The balances in the hands of the Bankers and the hon. Secretary together amount to £2,692 1s. 4d., and the Stock in the Three per Cent. Consols to £4,384 1s. 1d. In conclusion the Council cordially congratulate the members on the continued prosperity of the Club, and also on its having been honoured by a visit from His Royal Highness the Prince of Wales on Monday morning last.

ABSTRACT OF BALANCE SHEET from December 1st, 1868, to December 1st, 1869.

RECEIPTS.

Balance in hand of Bankers, Dec., 1868	£2,672	18	8
Balance in hand Hon. Secretary ...	14	1	10
Received by Bankers—Dividends...	£2,697	0	8
Ditto Subscriptions	119	6	9
By Hon. Secretary of Agricultural Hall Company, Show, 1868	1,000	0	0
Life Compositions	52	10	0
Subscriptions	830	15	0
Fines for Non-exhibitors, 1868	28	0	0
Payments for Implement Stands, 1869	1,647	9	0
Non-Members Fees Live Stock, 1869	264	12	0
	£2,131	15	3
Prize last year's deficit not cashed..	5	0	0
	£2,136	15	3

EXPENDITURE.

Prizes ... Show, 1868	£2,000	0	0
Silver Cups ... ditto	160	0	0
Medals ... ditto	131	0	0
Rewards to Feeders ... ditto	60	0	0
	£2,351	0	0
Stewards' Fees...	80	0	0
Judges' Fees	105	0	0
Veterinary Inspector...	25	10	0
Poor Master and Inspector of Implements	15	8	0
Report on Live Stock...	15	0	0
	340	18	0
Bills, Printing, Advertising, and various per detailed account	332	4	4
Assistant Secretary, Clerks, Postage, &c., as per detailed statement	148	10	7
Life Compositions Invested...	294	0	0
Cattle Weighing Machine, Iron Safe, &c.	81	1	0
	£2,444	13	11

Balance at Bankers, Dec. 1st, 1869	£2,671	0	5
Balance in hands of Hon. Secretary	21	0	11
	2,692	1	4
	£2,136	15	3

Invested in Three per Cent. Consols Stock....£4,384 1 1

On the motion of the CHAIRMAN, the Report was unanimously adopted.

Mr. TORR said he had great pleasure in nominating the Marquis of Exeter as a fit and proper person to fill the office of President-Elect, in other words, President for 1871. The noble Marquis was very earnest in regard to agricultural matters. Most of them were no doubt old enough to remember that the late Marquis took great interest in everything relating to agriculture, and that besides being a great breeder of cattle and sheep, he was a great breeder of race-horses. The present Marquis was equally fond of agriculture, and he (Mr. Torr) was convinced that he would perform the duties of the office of President with satisfaction to the Club, and with credit to himself (cheers).

The Earl of HARDWICKE: Is racing connected with agriculture? (laughter).

Mr. TORR: Well, the winner of the last Derby and of the Two Thousand Guineas Stakes—Pretender—was bred by a small farmer in the neighbourhood of Doncaster (Hear, hear, and laughter).

Mr. PAINTER having seconded the nomination, it was carried unanimously.

On the motion of Mr. Joseph DRUCE, seconded by Mr. TURNER, the Vice-Presidents were re-elected.

On the motion of Lord WALSHINGHAM, seconded by Lord TREDEGAR, Mr. Barnett, Mr. Joseph Druce, and Mr. Torr were re-elected trustees.

Viscount BRIDPORT, in proposing the re-election of the Honorary Secretary, said he was quite sure they could never get a better, and he had very great pleasure in proposing his re-election (cheers).

The motion was seconded by Mr. CROSSKILL, and adopted unanimously.

The members of the Council retiring by rotation were Mr. John Baldwin, Mr. Richard Hornsby, Mr. E. W. Moore, Mr. C. Sewell Read, M.P., Mr. William Sanday, Mr. H. Thurnall, Mr. J. S. Turner, and Mr. Owen Wallis.

The following house list of new members proposed for election was adopted unanimously:

Mr. J. D. Allen, Pythouse, Tisbury, Salisbury
Mr. Joseph Druce, Eynsham, Oxon
Mr. Thomas Duckham, Baysham Court, Ross, Herefordshire
Mr. Walter Farthing, Stowey Court, Bridgewater
Mr. William Rigden, Hove, Brighton
Mr. Richard Stratton, Burderop, Swindon
Mr. Thomas Twitcheil, Willington, Bedford
Mr. Henry Webb, Streetly Hall, Linton, Cambs.

The business on the agenda paper having terminated with the election of several new members,

Lord WALSHINGHAM proposed a vote of thanks to his Grace the Duke of Marlborough for his kindness in attending the meeting, and his conduct in the chair.

Mr. PAINTER seconded the motion, which was carried by acclamation.

The CHAIRMAN said he felt very grateful for the honour which the Club had done him by electing him president of the Club during this year, and for the confidence which had been reposed in him; and it had afforded him great pleasure to render what humble assistance he could, while at the same time obtaining a greater insight into the working of the business of the Club. He was glad that on the termination of his year of office he was to have so excellent a successor (cheers).

The meeting then separated

THE MANAGEMENT OF THE SMITHFIELD CLUB.

Nothing can be more unsatisfactory, not to say discreditable, than the condition into which the conduct of the Smithfield Club Cattle Show is gradually drifting. On the face of it the Council of the Club would appear to have entered into a contract with the Agricultural Hall Company, on the strength of which agreement that building is for a certain space of time handed over to the control of the Stewards of the Club. But in point of

fact this is not so. It would, indeed, be very difficult now to say where the chief power centres. The Council of the Club has passed certain rules and regulations, which it is the duty of the Stewards and the Honorary Secretary to see properly carried out. Previous to the meeting opening to the public very stringent measures have been enacted as to keeping people out. But people are not kept out. Owners, or their relatives, agents, bailiffs, herdsmen, and others, who have no right to be in the Hall, nevertheless get into the Hall, where they not merely look to the comforts of their own beasts or sheep, but frequently put up the entries of other exhibitors. Of course this is manifestly unfair to those who do not get in; while the very natural question which arises is how so experienced and efficient a director as Mr. Brandreth Gibbs should ever countenance such unwarrantable intrusion? But further, the Press generally is favoured with an invitation to attend on the Monday morning when the show actually opens, the card forwarded implying, or more directly intimating, that no representative of a newspaper will be earlier admitted. But it is not so. For some week or so previous the reporter of one daily Paper has the run of the Hall; or it would look, indeed, as if he did everything but sleep there, the best of something to eat and drink being hospitably provided him. During these preliminary proceedings he exercises his avocation, more especially over the implements which are in the course of arrangement; and in performing this office he sees occasion to speak continually in the highest possible terms of one certain stand or so, the exhibitor of which has, curiously enough, something to do with the Agricultural Hall Company. Of course, again, this is manifestly unfair. If the reporter of any particular Paper is to enjoy a privilege beyond his fellows, surely somebody should see to the way in which he discharges his trust; and when, morning after morning, we find the same firm or two belauded, and all the other implement makers left out in the cold shade, we say unhesitatingly that such a violation of the orders of the Club is a gross injustice to those other exhibitors of agricultural machinery. If it were paid for there could not be a more palpable advertisement than this preliminary notice too frequently assumes.

But further still. Let us say that, being anxious to make the most of the time before us, always remembering that our own Journal is published on Monday afternoon—let us say that under such pressure we applied to Mr. Brandreth Gibbs for leave to walk through the Hall on the Sunday after the animals had been placed ready for the judges on the following morning. The reply, as we imagine, would be that no such request could be possibly granted, that no one but the Stewards and the attendants could be admitted, and so on. But this, unfortunately, is not the fact. According to his own showing the reporter of this said Paper was in the Hall on the Sunday night, to see a sight that “was afforded to a very few pair of eyes.” And then he goes on to say the place was “unusually quiet”—that it was “perfectly ventilated”—that “the improvements were manifest,” and to throw out other such puffs direct, not so much for the Club but for the Company’s shillings. “In the great Hall,” as his graphic pen runs on, “most of the animals littered down for the night were carefully swathed and wrapped; but their points could be very well distinguished;” and he proceeds accordingly to prophesy there and then that the winner of the 100 gu., or, in other words, the best animal in the Show will be—a beast which took a third prize in its class! However well primed, it will thus be seen that at the Hall’s own Correspondent did not take much by his visit; but this, of course, is not the point. If one reporter be passed in, why should not others? It must be understood that

we speak by no means feelingly on this matter; for, as Members of the Club, we can now always ensure a look over the classes while these are before the judges on the Monday, and when we can see a deal more than when the animals are “in their rug-paletots and neat canvas suits.” But beyond this even, is it worth while to turn the Sunday into a private view? would the exhibitors like it? or would not the beasts be all the better by being left alone? Some years since there was a horse show in this very Hall, when by way of currying favour in the “very few pairs of eyes” of certain Frenchmen, valuable horses were pulled out and bucketed about on the Sunday, a select performance that was immediately followed by the proffering of apologies, and the voting of censures.

And is the Smithfield Club to come to this? Is the show to be made a Sunday show for the Agricultural Hall people, and their own reporter? Strict disciplinarian as we know him to be, straightforward and impartial as we believe him to be, we cannot think that Mr. Brandreth Gibbs has had any hand in this business. On the contrary, we believe that unwarrantable liberties and encroachments are being taken by people who have no share in the management of the Smithfield Club Show. The Agricultural Hall is, or should be, in possession of the Stewards of the club, and until the first five shillings be paid not a person should be passed in but under the order of the stewards or of the Club Secretary. Have any of these gentlemen given any particular person the run of the place and his teeth before he had any right to enter? We do not think it. But what we do think and know is that one of the Stewards has found the thing so intolerable, has seen the encroachments so rapidly increasing, that he has brought the matter before the Council, with a determination that, if the abuse be not repressed, he will act no longer.

With ten or twenty, forty or fifty apt journalists at work, every man will be pretty certain to get fair play; with one, most probably ludicrously ignorant of that he is doing, everything will depend upon how he is crammed by this salesman or that showman. Indeed, it is to the showmen and salesmen that all the credit of the Smithfield Club is fast coming. We gather from “our own” daily Paper, towards the close of last week, that the Show had gone off exceedingly well, “a fact highly creditable to those who have laboured in promoting the success.” And who are those? Men like Mr. Painter, Mr. Henry Overman, Mr. Turner, Mr. Beazley, Mr. Brandreth Gibbs, and others who have given their time and labour for days or weeks or months past to so successful an issue? Certainly not; but our gratitude, we hear, is more especially due to “the perfected arrangements and straightforward task” of the secretary of the Agricultural Hall, and to “the experience and untiring services” of the sub-secretary, and to “the chairman of the Hall Company,” and to Mr. This, the butcher, and to Mr. That, the salesman, and so forth. Only last year the thing went a little further, when it was propounded, in the largest type, that one of the Hall directors, who was not a Member of Parliament, should be made a Member for his own county forthwith! Such ludicrous, clumsy puffs as these do not, of course, tell for much, but they are significant. They serve to point pretty clearly to the source from which “our own correspondent” gets his priming and his privileges; while we quite agree with *The Daily Telegraph*, which, in a farewell notice of the show, on Saturday, says: “A vexatious, and not by any means honest or justifiable practice, noticeable more and more each year, has now attained such general prominence, that no doubt the necessity of imposing some effectual check will be recognised by that highly respectable but rather inert body,

the Smithfield Club." This, of course, cuts all sorts of ways, for there may be more than one practice, not by any means honest or justifiable, connected with the conduct of the Smithfield Club; and we heartily join in the hope that "this highly respectable,

but rather inert body"—mark the passing sneer—will see the necessity of imposing some effectual check. It shall certainly not be our fault if, not merely as journalist but as members of the Club, something be not done, as there is a deal more to be said on the subject.

THE METROPOLITAN GREAT CHRISTMAS CATTLE MARKET.

Although the past season is generally admitted to have been a very favourable one for stock rearing, we confess that we were somewhat disappointed in the results as shown at to-day's cattle market. Certainly there were some extremely fine animals exhibited, but the general quality was scarcely equal to the average of years. This is the more surprising as the funds at the command of graziers must be large; as, notwithstanding the losses entailed by the great drought of 1866, the very favourable character of the past season has again placed grazing farms at a great advantage. While the past season has proved disastrous to wheat farmers, graziers have been greatly benefited by its humid character, and have been enabled to dispense largely with the assistance of artificial feeding stuffs. Up to a very late period the pastures afforded a good bite of grass for the cattle, and this is a consideration of very great importance. Possibly this fact has been presumed upon too much, and the cattle may not have received artificial food in sufficient quantity, towards the close, to bring them rapidly to maturity. There were undoubtedly some very prime animals exhibited, especially among the cross-breeds, but the pure-breds—which, however, were limited in number—were not generally in good condition. Most breeds were fairly represented, but, as regards numerical strength, the Short-horns and crosses came first. Some of the finest animals exhibited were of these classes, and their character spoke volumes of the great advance which has been made not only in breeding but in grazing, as a science. The show of Herefords was not extensive, but many of the animals were of great weight, and sold at very full prices. The general character of our markets seems stamped for the future, and a large preponderance of cross-bred animals may, from the large remuneration offering by them, be generally expected. The small number of Devons on sale were of fair character, but scarcely up to previous years, either as to quality or weight. A few North-Devons on the stands, however, compared very favourably with any of that breed that we remember to have seen. Very few pure Welsh animals were on offer, but they were generally in prime condition; while the old Sussex breed was scarcely represented. Now that the system of crossing is carried to an extent altogether unanticipated, it is necessary to cry out against the total annihilation of those good old breeds which formerly bore a high reputation in the Smithfield market, but which now stand in imminent danger. The great difference between the pure and the cross-breeds, as marketable commodities, and the rapidity with which the latter are made ready for market, as compared with the time and expense necessary to bring the former into condition, is the obvious explanation of this state of things, and on this account the danger is more threatening.

The Scotch graziers kept up their reputation at this morning's market. Some wonderfully fine animals came to hand, both pure and cross-breeds, and the North British graziers must be acknowledged to be a-head of the Southern competitors in this particular department. We do not mean to assert that there were no English fat Beasts in the market to compare with the Scotch animals,

but we hold that the latter as a class carried off the palm. The Scotch season commenced late this year and the early arrivals were certainly not such as to create any extraordinary impressions of future supplies, but the quality of the Beasts at this morning's market has quite dissipated these forebodings, and there is reason to believe that Scotland will continue to supply us with excellent Beef throughout the season.

The number of mongrel animals continues to diminish year by year. The "in-and-in" system has proved itself altogether unremunerative, and further attempts in this direction will now in all probability be abandoned.

A marked improvement was noticeable in the quality of the foreign animals, those from Tonning being especially good. The French Beasts also were of good character, but the general quality of the foreign arrivals was sufficient to prove that continental graziers are still far behind English breeders in their art.

From Ireland our receipts were to a fair extent, but there was no feature of importance to notice in regard to the animals themselves.

The following return shows the number of Beasts exhibited, and the prices realized for them on the "great days" during the last 28 years:—

Year.	Beasts shown.	s.	d.	s.	d.
1841	4,500	3	8	5	0
1842	4,541	3	4	4	8
1843	4,510	3	8	4	4
1844	5,713	4	0	4	6
1845	5,326	3	6	4	8
1846	4,570	4	0	5	8
1847	4,282	3	4	4	8
1848	5,942	3	4	4	8
1849	5,765	3	4	4	6
1850	6,341	3	0	8	10
1851	6,103	2	8	4	2
1852	6,271	2	8	4	0
1853	7,087	3	2	4	10
1854	6,181	3	6	5	4
1855	7,000	3	8	4	2
1856	6,748	3	4	5	0
1857	6,856	3	4	4	8
1858	6,424	3	4	5	0
1859	7,560	3	6	5	4
1860	7,860	3	4	5	4
1861	8,840	3	4	5	0
1862	8,480	3	4	5	0
1863	10,370	3	6	5	2
1864	7,130	3	8	5	8
1865	7,530	3	4	5	4
1866	7,840	3	8	5	6
1867	8,110	3	4	5	0
1868	5,320	3	4	5	8

We now proceed to particularize the best portion of this morning's market.

Mr. George Dickson's alley was the centre of great attraction, being well stocked with about 850 Scotch-fed Beasts of prime quality. The principal lots from Aberdeenshire were forwarded by Messrs. Knowles, Wishart,

Wyalie, Reid, Beddie, Mitchell, Frost, Bruce, and Shand. Those from Banffshire were consigned by Messrs. Longmore, Stodart, Milne, and others. Mr. Dickson had also on sale 12 superior animals forwarded by Mr. Scott, of Yokieshill, Mintton. To test the capability of the new cattle truck, one-half of the latter was sent in an improved, and the other half in an ordinary truck, but both lots arrived in extremely good condition.

Messrs. Giblett and Son had also a remarkably fine show of animals, among which were 86 extraordinary animals consigned by Mr. McCombie, M.P., of Tillyford, which reached, on the average, £40 each. Messrs. J. Martin, Wm. Mennie of Huntly, Reid of Greystone, Skinner of Aberdeen, were also well represented at the stand. About 150 very excellent French Beasts were disposed of by Messrs. Giblett.

Messrs. Maydwell and Hoyland had some excellent beasts on offer, the property of Messrs. Reid and Elmalie, of Greystone, Vale of Alford; Messrs. Wallis and Strachan, of Turriff; and of Mr. Bryan, of Uppingham.

Mr. T. Duckworth had a good show of beasts, among which was a fine lot of 85 animals forwarded by Mr. J. Hill, of Coatbetch, near Lutterworth.

Mr. Thomas Dixon, had some very fine beasts from Lincolnshire, Northamptonshire, Norfolk, and Scotland.

Mr. Vorley's stand was occupied by a fine collection of animals, and Mr. Wolton and Mr. Walsh had some choice beasts from various parts of the country.

Large supplies of Sheep came to hand, and their general character was good. At Messrs. Lintott and Son's stand there was a fine show of Southdowns, forwarded from Herts, Surrey, Sussex, and Hants.

Messrs. Walby had some choice Sheep consigned by Mr. Palmer, of Benjo, near Hertford, and by Messrs. Woollett and T. Smith, of Sandridge.

Mr. Dodd exhibited some fine Sheep, the property of Messrs. House, Nash, King, and Aldworth.

There was a good show at Mr. John Weall's pens, received from Herts and Berks.

Mr. J. Collins, Mr. Kingsley, Mr. Guerrier, Mr. Eland, Mr. Corfe, and Mr. C. Burrell had some fine Sheep on sale.

STATE OF THE TRADE.

The inquiry for Beasts was not animated, and the market opened very quietly. Some time must elapse before the animals can be slaughtered for Christmas consumption; and, meantime, London butchers will be under a disadvantage as regards keep. The dead meat trade ruled dull; nevertheless, the attendance of butchers became fairly numerous; so, as sales progressed, salesmen showed more firmness, and prices advanced slightly over those current on Monday last. Very choice Scotch and cross-bred Beasts realize 5s. 10d. per 8lbs.; but we regard this as quite the top figure.

The arrivals of Beasts were distributed as follows: From Lincolnshire, Leicestershire, and Northamptonshire, about 2,200 Shorthorns, &c.; from Norfolk, Suffolk, Essex, and Cambridge, about 1,900 Scots and crosses; from Scotland, 1,820 excellent animals; from other parts of England, 1,820 of various breeds; and from Ireland, about 900 Oxen, Cows, &c.

Notwithstanding the increased number on sale, the Mutton trade was fairly active, and last week's currencies were well supported, though seldom exceeded. Really prime Southdowns and half-breds changed hands at 5s. 10d. per 8lbs.

Calves sold freely at fully late rates; and Pork was steady in price.

Per 8lbs., to sink the offal.

	s.	d.	s.	d.
Coarse and inferior Beasts.....	3	4	3	10
Second quality ditto	4	0	4	8
Prime large Oxen	4	10	5	6
Prime Scots	5	8	5	10
Coarse and inferior Sheep.....	3	6	4	2
Second quality ditto	4	4	5	4
Prime coarse-woolled ditto	5	2	5	6
Prime Southdown ditto	5	6	5	10
Large coarse Calves	4	0	5	0
Prime small do.	5	4	6	2
Large Hogs	4	6	5	4
Neat Small Porkers	5	6	6	2

STATEMENT AND COMPARISON OF THE "GREAT DAY," SHOWING THE SUPPLIES AND PRICES OF FAT STOCK EXHIBITED AND DISPOSED OF ON THE "GREAT DAY," AT THE METROPOLITAN CATTLE MARKET IN 1868 AND 1869.

Per 8lbs., to sink the offal.

	Dec. 14, 1868.				Dec. 13, 1869.			
	s.	d.	s.	d.	s.	d.	s.	d.
Coarse and inferior Beasts	3	4	3	8	3	4	3	10
Second quality ditto	3	10	4	6	4	0	4	8
Prime large Oxen	4	8	5	4	4	10	5	6
Prime Scots, &c.	5	6	5	8	5	8	5	10
Coarse and inferior Sheep	3	2	3	8	3	6	4	2
Second quality ditto.....	3	10	4	6	4	4	5	4
Prime coarse-woolled ditto	4	8	5	0	5	2	5	6
Prime Southdown ditto ...	5	2	5	6	5	6	5	10
Large coarse Calves	3	8	4	8	4	0	5	0
Prime small ditto	4	10	5	10	5	4	6	2
Large Hogs	3	6	4	10	4	6	5	4
Neat small Porkers.....	3	10	4	8	5	6	6	2

THE YORK SALE OF SHORTHORNS.—Mr. Dodd's second conglomerate sale of Shorthorns was, if anything, less successful than the first, which he attempted in the Sea-Horse Inn-yard last year. Nearly twenty more animals swelled the catalogue than were offered last year, and the proceedings began at half-past 12 in a field close to the York Fat Show Hall; but it was dim twilight and a scattered ring-side, ere the last—a red yearling bull of Major Stapilton's, and bred from Lord Feversham's stock—was knocked down at 16 gu. The first five cows were all sold to butchers for about market value. Some cattle belonging to the late Mr. Dawson, of Weston Hall, of Grand Duchess fame, were brought out in good trim, and were apparently useful animals of capital blood. Two, Savannah and Ada, were bought by Major Stapilton respectively at 56 guineas and 40 guineas, and Beauty (a white) went to Mr. Singleton for 40 guineas. Thorndale Lad (23068), a Herd-Book picture bull of Bates' blood, made 88 guineas (Mr. T. Lambe), and Margais (26835) went to the Earl of Zetland for 35 guineas. Lord Milton (26685), bred by Captain Gunter (of the Wild Eyes tribe) for which it was reported a hundred had been asked privately, made the astounding figure of 29 guineas, and goes into Essex; whilst another roan ten months calf by Fourth Duke of Thorndale was knocked down to Mr. Cattley for 26 guineas. A white yearling of Mr. Baxter's of Bates' blood on sire and dam's side reached 15½ guineas, after being the winner of three premiums. Some of the lots were not sent up for sale, and a dull, damp day made the proceedings if anything more miserable.

SALES OF CATTLE AT THE NORTHERN COUNTIES FAT SHOW CLUB.—The cross ox, from Ardillie, sold for £70; the first-prize three-year-old polled ox, from Morayston, was bought for £52; the first prize two-year-old do. for £76; the second prize do. for £47; one of the prize lot of four crosses was bought for £37; the first prize two-year-old heifer for £40; the Morayston first prize Shorthorn ox for £26 10s.; the first prize polled ox under two years sold for £28, and the second prize for £25; the second prize two-year-old stot sold for £34, and the first prize heifer for £36; the Ardross crosses sold at from £33 to £44; the six-quarter-old crosses from Wester Lovat sold at £25 and £26; Raigmore's Highland two-year-old ox for £36. In sheep, Elhot and Co.'s pen of crosses, which carried the Highland Society's medal, sold for 92s. each; the first prize Cheviot wethers for 67s.; the first prize blackfaced wethers for 71s., and the second prize lot from Corriemoney for 62s.

THE YORK FAT CATTLE SHOW.

The thirteenth annual Meeting of this Society has been held in York on Tuesday, Wednesday, and Thursday, December 7, 8, and 9. The attendance during the day has been very select, being principally the gentry and leading farmers of the county, but in the evening the citizens in great numbers attended; so that the financial affairs of the Institution will be left in a healthy state after receipts and expenses have been balanced.

The entries were as follows: Cattle, 69; sheep, 26; pigs, 64; poultry, 334; pigeons, 147; roots, 89. These numbers are more than an average of previous years. Being held at the same time as the Smithfield Club Show the York exhibition is necessarily shown of some of its attractions in the shape of animals that have been sent to the Metropolitan meeting in preference to the one held in the county. Taking into account this circumstance and the prevalence of disease amongst cattle, which has had a tendency to prevent animals being sent from home in railway trucks for fear of catching infection, we think that Yorkshire has come forward favourably in filling the stalls here with a capital and by no means small selection of animals, well worthy of examination by breeders and feeders. The show at York has always one speciality of considerable interest: it is a court of appeal, in which objections to the ruling at Leeds, during the previous week, can be reviewed and revised occasionally. In this instance this revision has taken place in several classes, with results, perhaps we may be allowed to mention, precisely as we predicted, and in others corroborative of the opinions which we then expressed. These instances we shall meet with as we go through the classes.

The character of the Shorthorn exhibition may be defined as moderate in number, but excellent in merit. The three first classes of Shorthorns, thus brought out 15 animals, out of which the judges distinguished with prizes and commendations 15; a fact that at once demonstrates the character of the competition.

In the aged ox class, the winner was Mr. Wiley's roan Shorthorn, which was beaten at Leeds in the Tenant Farmers' class by the black-butcher beast belonging to Mr. Reid, Aberdeen. Our opinion on this, is it not written? Verily there is not a stain on his Shorthorn skin of the representative of Brandeby by his inglorious tussle with the half-caste. He is now in his proper place at the head of his class. We described his "merits" and his "frailties" last week. The second prize is a wealthy fat ox, worthy of his position, a capital carcass, but wanting in style. For the ox under three years old the competition was very close; and the contest in our opinion must have waxed warm, and there must have been "many minds" as to merit even in three judges, when we have in a class of eight three prize animals, one highly commended, and three high commendations, leaving only one animal "out in the cold!"

The first beast is a "new light," and makes his first appearance on any stage on this occasion. We guess, however, that it is not "for once only," as he is likely to uphold the honour of his house for some time to come. He is the property of Mr. G. Taylor, of Bridlington, and is 2 years and 7 months old. He is an upstanding, gray-looking fellow, in fact an exquisite, of the Shorthorn family. His colour is rich, and his hair and handling soft as far, yet firm as India-rubber, smooth as mole-skin, yet rough to the eye—breeders know it when they meet with it. It is here, however, and, in combination with the other points of rare merit—his wonderful crops and shoulders, and first-rate figure generally—have secured to him the first prize in his class, and the President's Cup, value £25 for the best ox in the Shorthorn classes. With so many merits we may venture to name his weak place—his breast-point, and between his hips and tail, both being deficient. We think, also, more weight may possibly bring him down in the middle. The second prize is the property of Lord Zetland. He is 2 years 11 months old, a good red, and the truest-made carcass of beef in the whole show. His hips are not covered merely, but lost, and his form that of a mighty beer-barrel without any protuberances. He is very heavy, and his quality is good; he is deep-

chested, and stands wide, in fact, he is just the notion of "two single gentlemen rolled into one"—if George Coleman's idea were to be realized. Many, very many, place him first; he is, however, deficient in style, has a coarse head, and his quarters from hip to tail are rather short; anyhow he looks queer about his tail, and wants an inch adding there, and also across his hips. We think, however, he is put in his proper place. The next prize animal, belonging to Mr. T. Knowles, Aberdeen, has really not a shadow of a claim to his present position—the third animal—an ox belonging to Mr. Drysdale, who obtained h. c. at Leeds, whom we described as a "true made animal, and fully entitled to the honour." The Earl of Zetland only just beats him. How Mr. Knowles has slipped in third we cannot imagine; but *bonus Homerus dormitat!* The three commended animals belong to Mr. Knowles, Mr. Wood (Thrapston), and Col. Markham (Aberford). The last we described last week; and the two others are good average animals. Altogether the class is one such as is rarely seen, and the judges must have had considerable difficulty in fixing the relative places of first-class animals of such dissimilar styles.

The cow class contained only four, and these four the same quartette we noticed so fully at Leeds. Lord Faversham's Mayflower is here placed first, Mr. Willis's celebrated Rose of Lucknow second, Sir W. C. Trevelyan's red cow 4 years and 6 months old third. This trio of rare merit we fully described in our Leeds report, and we must therefore refer our readers to that for any information as to the personal attractions of all the three, simply saying they are all beauties.

"How happy could we be with either,
Were t'other dear charmer away."

was the position and the feeling of the examiners on this occasion. The decision, however, was given as above; confirming the Leeds position of Mayflower, and elevating Rose of Lucknow above Sir Walter Trevelyan's cow. Our remarks on the Leeds decision last week were: "The Rose of Lucknow is thus beaten by two new aspirants. In one case the decision is sure to be reversed, in the other it possibly may." The best Shorthorn heifer was Sir W. C. Trevelyan's neat little maiden, 2 years and 3 months old. She is pretty in form, with the best possible quality of flesh and handling. The second animal of Mr. Reid's is 3 years and 8 months old, very fat but patchy, with light hind-quarters, and quite another thing to the winner.

The cross breeds were 10, in two classes. Mr. MacPherson's ox, the winner of the champion cup at Leeds, of course wins here, as best cross-bred ox not exceeding 4 years, and the ten guinea cup for the best cross-bred animal, male or female. Sir W. Trevelyan is placed second to him here, as at Leeds, with the same good level Highland ox with a very slight dash of something else in him. The cross-bred cow or heifer is Mr. Bruce's capital blue-black, full of the best of beef and a very great weigher in a little room. He won the same prize at Leeds.

In the Tenant Farmers' Classes a capital ox the property of Mr. Thornton, of Stapleton, won the first. He has the fine style and character of a Shorthorn, though not quite so fat as his competitor, a red and white ox shown by Mr. W. Kirby Wilberforce, which obtained the second honours. The winner has fine frame, straight top, long quarters, good middle and breast end, but has a light neck, and is not fleshy on his rib. The second ox is good in places, but his back is rather hard, and his rump and outfit of beef very deficient. Mr. William Hill, of Wetherby, took first for Shorthorn heifer or cow in the Tenants' Class, with the cow with which he won the same prize at Leeds. She is a weigher in every part, and finishes an honourable career here, having been a prize-taker both at Leeds and York last year. She wins the cup, also value 10 gu., as best Shorthorn in the Tenants' Classes. Mr. Fisher's second prize cow is a very good animal. The best heifer of any breed, except Shorthorn, is Mr. Lund's, of York; and a clever Highlander, of truer frame and symmetry than we have seen out this year. She is not nearly up to

the mark yet in fatness, and will come again and "take honours" some day.

The Scotch breeds produced very small competition. Mr. Reid, Aberdeen, took first and second ox prizes, and first and second for heifers, walking over without competition in one case, and beating Sir W. Trevelyan's black heifer in the other. The same animals met at Leeds, and the judges did not award a second prize.

For Highland ox, and for Highland cow or heifer, the entries were precisely the same as at Leeds, and the awards also were similar; Mr. Drysdale and Sir Walter being first and second for the ox class, and Mr. Eastwood and Sir Walter first and second for heifers. These animals we described last week.

The district prizes for "tenants residing within twenty miles of York," were two, and a cup, value 12 guineas, given by Sir Walter Trevelyan. This cup and the first prize, for best cow or heifer, Mr. William Hill, Wetherley, secured with the beautiful heifer that won the heifer prize in the Tenant-farmers' Class, at Leeds. This animal has the most beef, of the best quality, and the lightest bone of any animal in the yard, and is much too good for her class. With his four years old cow and this heifer, Mr. Hill scores four first prizes and three silver cups at Leeds and York this season, independent of his premiums for pigs and sheep. Verily he is an old cricketer, and knows where to place his men in the field, when he has a good team in hand.

The sheep are a good display, and more numerous than at Leeds; but the winners are nearly the same animals. We protested against the giving the cup for the best sheep in the yard at Leeds to cross-breds from Fochabers, against the pure-breds of Mr. Jordan, or Mr. Byron, Sleaford. We still say that "unless a cross-bred animal is strikingly superior to a pure-bred one, the award ought to go to the pure-bred." And it has been so here; Mr. Jordan getting the cup for the "best pen of sheep" against the Leeds cross-bred winners from Fochabers. Mr. Jordan took first for wethers; and Mr. Brown, Holme-on-Spalding, the second with sheep yet more of the Leicester than Mr. Jordan's; still, as fat sheep, Mr. Jordan wins cleverly. The Southdown and horned Scotch were only moderate. The cross-breds of Mr. Hunter, of Fochabers, N.B., of course took first and second in their class, though they failed for the cup very properly. Mr. Jordan took "best fat sheep" with a famous animal; Lord Wenlock the second prize; and Mr. Brown showed a "commended" fat wether, to our mind a type of the *breed* of real improved Leicester, of which Mr. Jordan's sheep is an *amplified*, and it may be improved, specimen.

The show of pigs is, as usual here, good in point of numbers and quality. There is a local pig-society here, called the Old Ebor, which acts as a feeder to the Christmas Show. Mr. Duckering took first in the large, the middle, and the small breeds severally; his small-bred sow Little Queen, in our report of the Leeds Show we proclaimed "the queen of beauty in these lists," although she did not then get the cup for the best pig in the yard. At York, however, she is chosen out of sixty-four to be the "best animal in the pig-classes," and has the sheriff's cup awarded to her. Could we "spot" the Derby winner in this way, we might attain the dignity of a prophet. Mr. Duckering has sold his three prize animals, winners of endless numbers of prizes, and of treble firsts here, viz., first large, first middle, and first small breed, and also of the Cup—and three other of his show animals to a butcher at Barnsley. The price is 6½d. per lb. live weight. This show will be a sight worth seeing when the six pigs are hung up.

The young bull prizes (special) produced capital competition, there being 14 entries in the two classes. Mr. W. Linton's young animal, winner in the calf class, and Mr. Woraley's in the yearlings, are most promising animals.

The young boars, small breed, were a good class.

Poultry, pigeons, and rabbits, were a large show. It was simply Birmingham and Leeds over again with the weeds picked out, and a few fresh pens added. The entry, therefore, of 550 in these classes is really a large one.

The Judges were, for cattle, H. Ambler, Watkinson Hall, Halifax; H. Peacock, Mount Vale, York; and B. Fawcett, Osbalwick. For sheep, G. Robson, Shires Bar, Easingwold; and J. Holiday, Barmston, Bridlington. For pigs, J. Knowles, Wetherby; and T. B. Whitwell, Gate Helmsley. For poultry,

R. Teebay, Fulwood, Preston. For roots, W. W. Wilberforce, Stockton Hermitage; G. Hutchinson, Prospect House, York; and F. Dickson, Healington.

EDINBURGH CHRISTMAS CLUB SHOW.

The third exhibition of fat stock of the Edinburgh Christmas Club was opened on Wednesday, Dec. 8, in the Agricultural Hall, Leven-street. Taken throughout, the show was one of great merit.

The cattle classes were of course the great centre of attraction. Of cross oxen exceeding three years of age there was a splendid show, the first premium being awarded to a superb brown and white ox exhibited by Mr. McCombie, M.P., Tillyfour. This animal was shortly afterwards sold for £70. Of Shorthorn oxen not exceeding three years, the first prize was given to a fine, compact-looking red ox, shown by Mr. Knowles, Aberdeen. In the polled section, the first place was given to a black ox, the property of Mr. Walker, Altyre, Forres. Of dairy cows there was a large and excellent display, the chief prizes falling to Mr. Hope, Duddingstone, and Mr. Porteous, Merchiston, respectively.

Of sheep, Lord Strathmore's first-prize blackfaced wethers were a very fine lot, one of them especially being as well covered over the back as any Leicester, and otherwise a very symmetrical and well-proportioned animal. Lord Sondes showed a lot of Southdowns, pure-bred wethers, which were commended recently at Birmingham. On handling, several of them seemed very defective in the back, and they compared badly with the wether classes, both of Cheviots and Blackfaced.

Subjoined is a list of the judges:

BULLOCKS.—Messrs. Jonas Wallbank, Berwick; J. McInally, Glasgow; and James Wilson, 146, George-street, Edinburgh.

COWS AND HEIFERS.—Messrs. Christopher Edmondstone, Bradford; Pattison Young, Penrith; and James Harrison, Skipton.

SHEEP.—Messrs. Joseph W. Raddock, Berwick; John McConie, Glasgow; and Andrew Wright, Corstorphine.

Pigs.—Mr. Peter Goose, Leeds.

PRIZES.

Shorthorn oxen, not exceeding three years.—First prize, T. Knowles, Aberdeen; second, W. Drysdale, Kilrie, Kinghorn.

Shorthorn oxen, exceeding three years old.—Prize, P. Fustin, Aberlady, Drem.

Polled Angus, Galloway, or Aberdeen oxen, not exceeding four years old.—First prize, R. Walker, Altyre, Forres; second, R. Bruce, Newton of Struthers, Forres.

Cross oxen, not exceeding three years old.—First prize, W. Drysdale; second, D. Beveridge, Buckthorne, Largo.

Cross oxen, exceeding three years old.—First prize, W. McCombie, M.P., Tillyfour; second, J. and W. Martin, New Market, Aberdeen.

Highland oxen, age considered.—First prize, W. Drysdale second, Earl of Southesk.

Heifers of any breed, exceeding two, but not exceeding three years old.—First prize, Wm. Drysdale, Kilrie; second, H. Sim, Ardullie.

Heifers of any breed, exceeding three years old.—First prize, A. Cowie, Crombly Bank, Ellon; second, H. Knowles, Aberdeen.

Cows of any pure breed.—First prize, A. J. Balfour, Whittingham; second, C. Lyall, Old Montrose.

Cows of any cross breed.—First prize, the Duke of Buccleuch; second, P. Beattie, Dunnydeer, Inach.

Dairy cows, any breed, quality especially to be considered.—First prize, James Hope, Duddingstone; second, A. Porteous, Merchiston.

Messrs. Swan's cup for best animal in the yard.—William McCombie, M.P., Tillyfour.

The Farmer cup for the best animal in the female cattle class.—Wm. Drysdale.

Mr. Bain's silver medal for the best cross-bred cow.—Mr. Hope, Duddington.

Mr. Bain's medal for the best Ayrshire cow.—Mr. Le Lothian Burn.

SHEEP.

(In pens of five).

Cheviot wethers under 23 months old.—First prize,

Bigger, Chapelon, Dalbaccie; second, B. H. Harris, Earahill, Forra.

Cheviot wethers under 23 months old.—First prize, T. Bigger; second, T. Elliot, Hindhope, Jedburgh.

Blackfaced wethers, age considered.—First prize, Lord Strathmore; second, W. Whyte, Spott, Kirriemuir.

Pure bred wethers, other than Cheviot and blackfaced, age considered.—Lord Sondes.

Cross wethers under 23 months old.—First prize, and Messrs. Swan's cup for the best pen of sheep in the yard, D. Shirlif Mairton, Drem; second, J. M'Gill, Dumfries.

PIGS.

Three fat pigs, not exceeding twelve months old, age considered.—First prize, A. Lealie, Asylum, Morningside; second, J. H. Dickson, Saughton Mains.

Three fat pigs, exceeding twelve months, age considered.—First prize, A. Lealie, Morningside; second, J. Wallace, Banbath, Leven.

Fat pig, exceeding eighteen months old, age considered.—First prize, Mr. Gordon, Manar, Inverurie; second, A. Lealie, Morningside.

THE BIRMINGHAM POULTRY SHOW.

After the remarkable displays we have had in previous years, it would be too much, probably, to assert that the present one is superior to all its predecessors; but we may, we think, assert, without fear of contradiction, that it has never been surpassed. The catalogue again opens with the Dorkings, of which there are no fewer than 301 pens—a truly wonderful array as regards either numerical strength or merit. From these figures we are led to infer their increasing popularity as table fowl, while their uniformity of character testifies to the care which their admirers bestow upon the breeding and management of them. The Cochins, though not so numerous as they have sometimes been, may be said to sustain the ground which they have gradually regained. The class of adult buff cocks was praiseworthy; but many of them give tokens of protracted moult. There is a large muster of Brahmas. The adult cocks of the dark variety are very fine; while the class of younger ones amply support the credit of the race and the estimation in which they are now widely held, the hens and pullets being also remarkably fine. We cannot accord the same emphatic eulogy to the light Brahmas, which, compared with the others, look weedy and degenerate. As to the Malays, which stand next in order, they appear to be increasing, there being eighteen entries against eleven last year, and they are also improving. The adult birds are the best. The French breeds muster in strong force, the *Creve-Cœur*s being large and robust, as if they were thoroughly acclimatised in this country. In our opinion they were superior to the *Rodans*, which are irregular in their appearance, and present great diversities of form and plumage, "motley" being apparently "their only wear." *La Fleche*, in which we observe more distinct approaches to a recognised type, was highly commendable. The Spanish was not equal to what have been frequently seen here; but are up to the level of the last few years. The old cocks make a creditable demonstration. The young ones were better; but blackened combs present unmistakable evidence of their having been affected by the late wintry weather. What most strikes an observer in regard to them is that in the males every other quality is sacrificed to the white face, and that the birds have in consequence acquired a dull and ungainly carriage. The pullets are, we think, the best specimens of the race to be met with on the present occasion. The various branches of the Hamburgs are well represented, and several of them are exceptionally good; more especially the Golden Pencilled, which, notwithstanding stained necks in the hens and pullets, are also retrieving their position, so far as colour and smartness of carriage are concerned. The Silver Pencilled are advancing, but not at the same rate. The Silver Spangled cocks are superior to what they were twelve months ago; but we cannot say as much for the hens and pullets. The Golden Spangled and Black varieties make a creditable appearance. The progress of the Polish is more marked, perhaps, than that of any other variety. The blacks, though very limited as to quantity, are admirable in quality; the few pens exhibited being quite equal to any we remember to have ever seen in this hall. The Golden are in a very respectable minority, with no features calling for remark; while the Silver

Spangled kind are advancing in numbers as well as merit. The class for any other variety, as usual, is interesting. The prizes are allotted—the first to a pen of Indian Game, resembling Malays; the second to Silkies; and the third to Andalusians. We must not omit to mention that one pen is occupied by a pair of birds described as "Four-legged Dorkings," but evidently mongrels, the cock in which has an extra pair of fully developed legs and feet underneath the wing on the right side. Besides these there are Frieulands, Padus Chamois, Gangesian Rumpless, Cuckoo Dorkings, Brease, and Hybrid Sonnerata. There is, as heretofore, a very large collection of Game; and all we are called upon to report concerning it is that it is exceedingly fine. The Black-breasted Red variety is strongly represented; but the Brown-breasted Red and Duckwings are also excellent. There is a large muster of Bantams, which diminutive but consequential little creatures are an exhibition in themselves. All varieties of game bantams are shown; black-breasted reds are the most prominent.—*The Midland Counties Herald*.

THE BIRMINGHAM AND MIDLAND COUNTIES CATTLE SHOW.

The annual meeting was held on Thursday, Dec. 2, at the Hen and Chickens Hotel, Birmingham. In the absence of the Earl of Coventry, the retiring president, the chair was occupied by Mr. C. M. CALDECOTT, of Holbrook Grange, Rugby. Viscount Combermere was elected president for the ensuing year. On the motion of Mr. Howard Luccock, seconded by Mr. Lowe, Mr. George Wise, of Woodcote, near Warwick, Mr. J. H. Barbary, Kenilworth, Mr. C. S. Bigge, Much-Wenlock, and Mr. R. H. Masfen, Pendeford, Staffordshire, were elected members of the council, to fill the vacancies caused by the death of Sir George Chetwynd, Bart., of Mr. Samuel Umbers, and Mr. W. J. B. Scott, and the resignation of Mr. Holland, of Dumbleton. Thanks were voted to the past president, Lord Coventry; to donors of special prizes; to the stewards of the various departments; and to Mr. John Shackel, the hon. treasurer. The Chairman said that the services of Mr. Shackel had now extended over so long a period—twenty-three years—and had been of so valuable a character, that he thought the present was a fitting time to testify their appreciation of them by a testimonial, to which he was sure all who were acquainted with Mr. Shackel would feel pleasure in contributing. Mr. Shackel was re-elected honorary treasurer for the ensuing year. The Secretary, Mr. J. B. Lythall, announced that three gentlemen had qualified as life members of the society by the payment of £10 each. There was a general expression of opinion that the money heretofore received from this source should not be expended in current expenses, but either invested in a separate fund, or spent in permanent improvements. Mr. T. B. Wright said there appeared to be an impression abroad that all business to be transacted at the general meeting was previously resolved upon; but he wished it to be distinctly understood that any subscriber was open to, and indeed invited, to make any suggestions he thought proper. A vote of thanks to the chairman brought the proceedings to a close.

DUNSTER CATTLE SHOW.—The following prizes were awarded at the meeting:—£5 for ox, J. Hole, Knowle; £3 for the second, J. Hole; £5 for pair of fat steers not exceeding four years old, G. Risdon, Dunster; £2 for the second, T. H. Risdon, Washford; £3 for fat cow, W. J. Gimblett, St. Decumans; cup for pure-bred bull, T. H. Risdon; cup for bull not exceeding two years old, G. Risdon; £2 for breeding cow in calf, T. Nurcombe, Minehead; £1 for the second, L. Buckingham, Selworth; £3 for breeding cow and her offspring, R. Paramour, Minehead; £1 for the second, J. Burston, Carhampton; £3 for heifer in calf, T. H. Risdon; £2 for heifer, T. H. Risdon; £1 for second, R. Paramore; £3 for pen of five ewes, T. H. Risdon; £3 for two horn rams, T. Nurcombe; £3 for best pen of horn ewes, R. Paramore; £3 for boar, J. Jones, Williton; £1 for breeding sow, T. H. Risdon; £3 for yearling colt, W. H. Langdon, Tivington; £3 for two-year-old draft colt, Mrs. Risdon, Timberscombe; £3 for cart mare, with foal, J. Hole; £3 for half-acre of mangold-wurtzel, T. H. Risdon.

REVIEW.

WHERE ARE WE NOW? A Politico-Agricultural Letter to the Chairman of the Central Chamber of Agriculture (Clare Sewell Read, Esq., M.P.) By W. WALTER GOOD. 34, Bowyer-street, Fleet-street.

In noticing this pamphlet, the *North British Agriculturist* of Wednesday last says "this letter is calculated to damage the Central Chamber of Agriculture, if indeed it does not destroy its future influence as the exponent of politico-agricultural questions." We quote this opinion the more readily as our own estimate of the management of the Central Chamber has long since been expressed; while our only doubt is as to whether we should notice Mr. Good's letter until the answer appears. He writes with remarkable force and point, as well as with an intimate knowledge of all that has occurred behind the scenes. As to the ludicrous incapacity which has from the first marked the direction, Lord Fortescue has already sufficiently demonstrated that very plain fact; but the supporters of the Chambers—and we speak rather of the local than the central element—will learn perhaps with some surprise the uses to which they and theirs have been turned. In such keeping the politics of Agriculture have been made to serve as the cat-paw to certain private ends; people have gone about the country, as in one especial instance, professing to speak to public questions when their real object has been to puff off certain speculations of their own. All this, we repeat, Mr. Good maintains with much power; but we should prefer to see him answered, as answered he must be, if there is any proof in the Chamber, before we go further into the nature of his charges. He addresses himself becomingly enough to Mr. Sewell Read, because, as he says, "I can readily believe that your good nature was appealed to most anxiously and persuasively, when the officials and authorities of the Central Chamber began to merge into a state of desperation in regard to their public influence and pecuniary condition; and I do not doubt for a moment but that you assented—after having declined on previous occasions—to be the chairman for this year, that, under your influence, the then declining Central Chamber might tide over 1869." There can be no doubt whatever that the name of Mr. Sewell Read has done everything for the Central Chamber that could be done; as it is satisfactory to see that he is in no way committed to the other schemes to which this institution has been turned. As our northern contemporary says, "the pamphlet is racy of the soil, and contains many hard hits demanding explanation from the Council of the Central Chamber." In fact, there must be explanations, as we seldom met with a paper which required more serious attention from the agriculturist of this country, or from those to whom the interests of agriculturists have been professedly entrusted. It was the fashion for some time for the creatures of the Central Chamber to say the *Mark Lane Express* was the only journal which ventured to criticise in anything like a tone of censure its peculiar proceedings. We may have, perhaps, been the first to do so; but now *Bell's Weekly Messenger*, the *North British Agriculturist*, the *Farmer*, and Mr. Good, have to be answered; as there can be no possible doubt but that the world will look for this answer.

IMPORTATION OF SHORTHORNS.—An importation of two heifers and two young bulls from Mr. James O. Sheldon's herd at Geneva, New York, United States of America, left New York ex Donan, November 18, 1869, and will probably arrive in this country by the end of the month. The two heifers and one of the bulls have been imported at a very

high price by Mr. E. H. Cheney, of Gaddesby Hall, Leicester. The heifers are Eleventh Duchess of Geneva, red, two year old, by Baron of Oxford (23371), dam Ninth Duchess of Thorndale by Third Duke of Airdrie (23717), and Fourteenth Duchess of Geneva, red yearling, by Tenth Duke of Thorndale, dam Eighth Duchess of Geneva by Third Lord Oxford (23200). The bull is Ninth Duke of Geneva, red with white marks, calved in April, 1869; by Tenth Duke of Thorndale, dam Fourth Duchess of Geneva by Grand Duke of Oxford (16184). The other young bull, imported by Mr. Harvey, Walton-on-the-Hill, Liverpool, on his own and the part of Messrs. Harward and Downing, Kidderminster, is Eighth Duke of Geneva, roan, calved in November, 1868; by Baron of Oxford (23371), dam Third Duchess of Thorndale by Duke of Glo'ster (11839). Mr. Sheldon has since sold half his herd to Messrs. Walcott and Campbell, Oneida County, United States of America. It includes six Duchesses at an average of 1,100 guineas each, and three Oxfords at 560 guineas each. Taking the tribes these prices are certainly without parallel. Messrs. Walcott and Campbell recently exported some of Mr. Booth's animals, including Bride of the Vale for 1,000 gu.—[The "Donau," that brought the Amerian mails and about a quarter of a million of specie into Southampton, also had on board these two heifers and two young bulls. They were safely landed in good order, having had a fair passage of ten days.]—*THORNTON'S Circular for November.*

BATH & WEST OF ENGLAND SOCIETY, AND SOUTHERN COUNTIES ASSOCIATION.

A special meeting of the Council of this Society was held on Tuesday, November 30th, at the White Lion Hotel, Bristol. Sir J. T. B. Duckworth, Bart., in the chair. There were also present:—Messrs. J. D. Allen, H. G. Andrews, E. G. Badcock, J. Townshend Boscawen (Hon. and Rev.), R. Bremridge, C. Bush, R. H. Bush, Thomas Danger, J. T. Davy, R. R. M. Daw, E. S. Drewe, Charles Edwards, Mark Farrant, John Gray, Jonathan Gray, John D. Hancock, J. Hole, H. P. Jones, J. E. Knollys, H. St. John Maule, R. Neville-Greenville, M.P., Thomas Phillpotts (Rev.), W. R. Scott, Ph. D., J. C. Moore Stevens, William Thompson, H. Williams, H. Spackman (Official Superintendent), and J. Goodwin (Secretary and Editor).

TAUNTON MEETING, 1870.—The contracts committee reported that for the privilege of supplying refreshments at this meeting only one tender had been received, viz., that of Mr. William Gibbs, confectioner, Southampton, conjointly with Mr. Hine, wine-merchant and brewer of the same town. As this was the only tender, it was provisionally accepted by the Council, and a discretionary power was granted to the committee to make such arrangements as to minor details as they might think desirable prior to the February meeting of the Council.

GUILDFORD MEETING, 1871.—The Deputation which visited Guildford, on the 4th of November last, reported in highly favourable terms of the site in Shalford Park, proposed to be placed at the disposal of the Society for the meeting to be held in 1871, and it was resolved by the Council that the invitation from the inhabitants of Guildford be accepted, and that the usual conditions be signed by the Secretary, on behalf of the Council, and interchanged with the conditions already signed by the authorities at Guildford.

PRIVILEGES OF MEMBERS.—Several new Members were proposed for election at the next meeting of Council to be held on Tuesday, February 22nd; and it transpired that no person not proposed on or before that day will be eligible to exhibit at the Taunton meeting on the same terms of advantage as those enjoyed by duly elected members. Persons desiring to be admitted as members of the Society should therefore at once put themselves into communication with the Secretary, at his offices in Bath.

THE GRAND PUMP-ROOM HOTEL, BATH.—The Secretary was directed to convey the thanks of the Council to the Directors of this hotel for the accommodation placed at the disposal of the Society, free of cost, for the purpose of holding council meetings there, prior to the removal of these meetings to Bristol.

THE LEEDS FAT CATTLE SHOW.

Despite the circumstance of Birmingham to some extent clashing with this meeting, and taking some of the good animals that belong to Yorkshire—despite the weather being cold and nipping to an extent to make it disagreeable for some to leave their “ain fireside,” and despite, also, the further diminution of the entries of cattle and sheep, by prudential considerations, under the circumstances of this district having been visited with the foot-and-mouth disease—the meeting has been a success in every particular. The show was held in the Smithfield Market Hall, a large rectangular building, 300 feet long by 30 feet wide, in one covered open space. To this a temporary wooden erection of the same size was attached, so as to make a covered show ground of 600 feet by 60 feet wide.

In the first class of Shorthorns, the prize for the best ox of any age fell to Mr. John Orthwaite for his 3 yrs. 11 months old ox without competition. It would have taken a very good animal to have displaced this had there been a large entry, as was proved by the fact that the Innkeepers' Plate of 10 gu. was awarded to him as “the best animal in the Shorthorn classes.” He came very near winning also the Presidents' Cup, as the best animal in the yard, being one of the three best in the ring. There are those who say that this, however, was his due, for he is an extraordinary good even animal, has size, quality, and symmetry; he is, in fact, extremely level in his points, has good hair, colour, and handling, and is a capital specimen of the Shorthorn. He took a second prize here last year, and has “trained on” very well. In class second for best Shorthorn Ox not exceeding 3 yrs. old, there were six competitors, out of which the judges distinguished two—one with H.C. and the other with C.—in addition to the prize animals. The 1st prize ox, belonging to Mr. Pulver, Northampton, is a roan, 2 yrs. and 9 months old, and is well worthy of his position. He has a grand forequarter and capital ribs, his beef is well spread, and he stands straight on his legs. He will certainly be heard of again next year, as he is an animal that will be “going on.” He has a tendency to *embospoint* more than we like, and has a very second-rate purse. In this particular the second animal, the property of Mr. John Orthwaite, has much the best of it; and like the winner of the previous prize, he does credit to Baines. He is a nice roan, and has all the look of a real Shorthorn; his touch is good, and his outline correct; his hind legs are not quite straight enough, and his neck vein and forequarter not equal to the first-prize animal. The H.C. ox, the property of Mr. Drydale, Fifeshire, is fully entitled to the honour. He is a true-made animal, and beef all over; though his meat is not exactly up to the mark in quality, the rough parts being too much developed, and his bone rather coarse; he also looks a little narrow to follow, and his handling is slightly loose. The commended white ox of Col. Markham is a fine, upstanding one for his years; like lads of a certain age he looks leggy, but if he lets down he will make a good big ox; he has a fine long quarter, but is weak in the middle and light in the thigh, and certainly in this class has achieved all he is entitled to. He gains something by standing in juxta position with the worst animal in the class and in the yard—an ox exhibited by Mr. Robinson, of Wingate Hill, Tadcaster—*sans* size, *sans* beef, *sans* symmetry, *sans* everything desirable in a show animal.

The class of Shorthorn cows having had living calves, is the best in the yard. It is worth a very long walk, in very cold weather, to see the three animals that have “taken honours here.” There were eight entries, and the judges have awarded honorary distinction to seven of them; a fact which justifies our opinion of the high merit of the class. The Earl of Feversham gets first, Sir Walter Trevelyan second, and Mr. Willis *prizéed accessit*. The winner, Sweet May, a roan, 6 years and 7 months old, has had but one calf, and makes her *début* on this occasion. She has the Bates' blood in her, and shows it slightly in her hair. The character of her which used to appertain to the Feversham herd is only very slightly manifested. She is by Photograph, dam Sancebox. Photograph was by Skyrocket, a prize winner at the Royal

Agricultural Society's Show at Leeds, out of Piccolomini by 5th Duke of Oxford. She is a gay-looking animal, and exhibits all the characteristics of the breed, and, as a Holderness breeder said, “is full of Shorthorn points.” Although very fat she moves well, and stands well and square on her legs, covering a great deal of ground. The space marked by her four feet on the ground, if enclosed by a line, would form a broad and perfect rectangle. This is rarely seen. She is, however, rather wanting in her fore shoulder, and slightly deficient behind the arm in the girth place. She has, also, one weak button in the back. Her girth is, however, very good, 8 ft. 10 inches. The second prize cow of Sir Walter Trevelyan makes her first appearance also on this occasion. She has Oxford blood in her, and is a very compact piece of beef at first sight. Her handling is too loose, and she is decidedly deficient on the fore-rib; and our opinion is confirmed by her girth of 8 ft. 4 inches, which we have since obtained. She is altogether short; and in fact, she has no business to be second. *Humanum est errare*—and if one man may often err, *tres* judges may sometimes make a mistake. This is one we think, in placing her before Mr. Willis' Rose of Lucknow. It is quite possible that in rejecting this cow for the first prize, for some certain reasons unknown to us, these reasons may have been urged so forcibly against her in comparison with Lord Feversham's cow, that they have not only operated in displacing her from the first prize, but have also operated in favour of Mr. Drydale, who certainly had not the same pretensions to compete with her that Sweet May possesses. The Rose of Lucknow is thus beat by two new aspirants. In one case the decision is sure to be reversed, and in the other it possibly may; as in our judgment it will. The Rose of Lucknow has been out for some time, and has achieved numerous successes. She was the best cow or heifer at Birmingham in 1868; and the winner of five other prizes in London, Liverpool, and elsewhere; as also of Lord Bolton's Cup for the best Shorthorn in the yard at the Richmondshire Agriculture Show in August last. She is between seven and eight years old, and has been so much in public that the general rumour was that she was over-trained, and getting *passé*. Now, it is extraordinary how a *notion*, once given currency to, floats through a crowd, and is accepted for a time. We bowed to it at first, but frequent examination of the class induced us to come to a different conclusion. It is true amongst Shorthorns as amongst “Formosas,” a fast liver cannot be a “girl of the period” for many seasons; but seven years old is *not* a very great age for a cow that has had a calf, and has had to be fattened for the “boards,” on the occasion of the annual agricultural Christmas parties, at Smithfield and Birmingham. In fact, she is only eight months older than the first-prize cow, Sweet May, who could not possibly have been got up in much less time than the Rose has required. But the question is one of fact rather than argument. We cannot detect any falling off; she is still the fine, blooming, full-blown Rose she ever was, a long, deep, and barrel-shaped Shorthorn; her crops are massive, her ribs arched, and covered behind the arm in the girth place with double the depth of beef that any other Shorthorn in the class has; her back and loins are also evenly covered, and her hind-quarters massive, inside the thigh particularly good. The top of her shoulder is rather bare. This is her one fault in our eye; and in this point Lord Feversham's cow fails also. The Rose of Lucknow is, however, inferior to the winner in her flank, and though she stands well, she has not the superlative merit in this point that Fair May has. To whichever of these two animals the palm may be awarded, the decision must be respected. We have an impression, however, that when the problem is worked over again at York, that the result will be different. A nine years' old cow, the property of Mr. Wainman, Workop, is commended in this class. She is short of hair and leggy, but is long and level, and has a commanding appearance; she is a fair specimen of the old style of Shorthorn. Two other commanded cows belonged to Mr. Dawson, Weston Hall, Otley, and another to Mr. Maynel Ingram, of Temple Newsam.

For the prize for best three years old heifer there was no award. The only animal shown by Mr. Reid, Aberdeen, not having sufficient merit. In "other breeds" there was short competition. In the two classes for cross-bred, or Irish, there were only six entries for four prizes and a cup. The class for oxen had, however, the honour to produce the winner of the President's Cup, for the "best animal in the yard," value 20gs. The same animal, of necessity, took first prize for oxen, and also the "Leed's Tradesmen's Plate," value 10 gs., for "the best beast in the cross-bred classes." The second prize ox, in this class, was Sir W. Trevelyan's. He is a dun Highlander, of first-class merit—long and level—and round as a churn. His beef is capital, and despite a little coarseness, he is a capital representative of a Highlander, with a tinge of Lowland blood in his veins. The winning animal, which comes from Forres, in North Britain, on the other hand has, in our opinion, a good deal more of the English than the Scotch blood in him. He is said to be "out of a cow not quite a Shorthorn by a polled Aberdeen bull." He is a good red, without a single speck of white, and of great length and weight. His outlines are both correct and elegant, and he is wonderfully even all over; a perfect *mole* in smoothness of outline and softness of skin; there are neither hills nor dales on the surface of his frame. He is what anyone must call, at first sight, an elegant fellow, of commanding appearance, and though a great weight and fat, he does not look so. Still he is not at all fed up to perfection of the art, as practised at present; and he will, we think, bear a good deal more training; his girth is exactly 9 feet hand measure.

There are only two animals in the yard that had a shadow of a chance with him for "the Cup," in Mr. Othwaite's four-year-old Shorthorn ox, and a Shorthorn heifer in the Farmers' Class belonging to Mr. William Hill, Wetherby, whose experience in bringing out "stars" renders him at all times a dangerous man in his class, be it what it may. Both these animals found many backers for the great event. The Crossbred Cow prize went to Mr. Bruce for a blue-roan polled cow, full of good beef, but of no particular merit in shape. The second prize was taken by Mr. Reid, with a crossbred horned animal, very uneven in shape and make.

In the class for Polled Scotch Ox, Mr. Reid again met no competitors. In this instance the judges awarded the prize. And similarly in the next class, for Polled Scotch Cow, he again walked over with a black heifer, long as a ship, and pretty full of lean beef, but coarse as a hippopotamus, and flat as a barn door on the ribs.

In Highland Cattle there was more competition, and the animals were altogether of higher character than the polled Scots and the crossbreds, the winner of the Champion Cup excepted. Mr. W. Drysdale's first-prize Highland ox and Sir Walter Trevelyan's second prize are only average specimens. The winner of the first prize Highland Cow or Heifer, the property Mr. Eastwood, Clitheroe, is an animal of another stamp. She is a thick, well-fed, beef-to-the-hock beast, of great size, and weight for a Highlander, with a back like a dining table a full thigh and twist, and is a good fleeced one all over. She girths 7 feet 9 inches; exactly the same as the prize Highland ox. The second-prize animal, exhibited by Sir W. Trevelyan, has a capital back, but with beef rather too loose. We certainly prefer the animal *specialty* commended in this class, the property of Mr. Seed, of Clitheroe. She comes from the same place as the winner, to which she is scarcely inferior, though she has not quite size enough; she has as good loins as the winner, and is even more level across from hip to hip, her twist being wonderful.

In the Tenant Farmers' Class the competition was very close, and the animals were of a high order of merit. The first-prize ox, the property of Mr. Reid, is a heavy-fleshed black Angus of great length and great weight. Better beef could not be. His handling was capital, and his breast point extraordinary. His outline is far from correct, his top rugged, and his general symmetry very deficient. He is thin through the heart, and girths only 8 feet 5 inches. The second-prize ox is a very fine specimen of the Shorthorn, of equal weight with the black one he has also breeding, and unexceptional symmetry. He girths 8 feet 11 inches, and was at the head of his class without doubt; and we do not hesitate to announce to Mr. Wiley, the venerable and venerated nonagenarian "father of Yorkshire farming" and veteran breeder of the north, that though he did not get the prize, public opinion

without hesitation awarded him the honour. The representative of the high school of breeding, and successful manager of the Wetherby herd of Duchesses, must have been grievously annoyed at having to agree to this "placing"! The *dead-meat* view we are afraid preponderated in the triumvirate, who have in this case struck out for *suet versus* blood, figure, and weight. If shape and make have nothing to do with decisions in the fat show-yards, when size and weight are *estis* factory, and if the absence of symmetry is to be no demerit, where killing qualifications are present, it will be quite as convincing and much cheaper to use a pair of butcher's scales, than to appoint judges to determine the relative merits of competitors.

The first cow prize went to Mr. W. Hill, Wetherby, for a capital specimen of Shorthorn beef, aged 4 years and 8 months, bred by Mr. H. S. Thompson, Kirby Hall, York. She took first prize here, and as fat cow at York last year. She girths 8 feet 3 inches. The second prize is just a useful animal.

The heifer class under four years old brought out another of Mr. Hill's Shorthorns, 8 years and 11 months old. This is one of the gems of the yard—a tip-top Shorthorn in touch and points, and a thorough fat beast in weight and quality of beef. She has decidedly the greatest weight of beef, with the least of coarse pieces, and the smallest bone of any animal in the yard. Her fore-legs can be comfortably spanned by the hand. Her girth is 8 feet 9 inches. We are told that she stood in last with McPherson's ox for the President's Cup; but this of course we cannot vouch for. If it be a rumour merely, it is one that is extremely likely to be true. As combining the most merits as a fat beast, she will be very near winning in another court, should they ever meet again. Of course she took the Butcher's Cup, value 10 guineas, for the best Beast in the tenant-farmers' classes, as well as the prize in her own class. Mr. Seed took second honours with a very handsome Highland maiden, 3 years and 9 months. In all the local, and also official reports, this honour is placed to the credit of another exhibitor. The mistake arose from the animal in question appearing to stand opposite the second prize card. This we detected when we inspected the class. A very good blue Irish half-bred was highly commended in this class.

The prize for a cow in milk was given to an animal with every point of a milch cow in great force, and several other fine animals were exhibited.

The show of sheep was very small. The Leicester and Lincoln came against each other, and all that can be said is that Mr. Byron's Lincolns were fully entitled to the first prize in the eyes of Lincolnshire farmers, while Yorkshiremen as a rule preferred Mr. Jordan's Leicesters, placed second. Both were equally good of their kind; as fat animals we think the Lincolns would be coarse. Lord Wenlock's Shropshire Downs took the prize in their class mainly from being the only entry. The cross-bred wethers belonging to Mr. John Hunter, of Dipple, Fochabers, were grand specimens of what a Scotch sheep can come to by judicious crossing; they took also the silver cup for best pen of sheep in the show-ground. On the other champion prize, that against all-comers, following close upon the award of the President's cup to a half-bred Scot, shows an extraordinary aptitude in the Scot, when crossed, to combine the excellence of the breeds. The Scotchman is generally said to do well when he "comes over the Border"; and, in this instance, the "Clans" have made a pretty successful raid on the gold and silver of the prize-list, the MacPhersons, the Reids, and the Hunters having come down with a vengeance on the Saxon show-yard.

The pigs were, as they always are in West Yorkshire, capital class. The entries were also very good, 58 animals being shown in nine classes. The first and second prize large breed fat pigs are both worthy of notice. We think that the winner, Mr. Listers, of Amuley, will not hold his own when he comes against Mr. Duckering's second prize pig. This animal has been a Royal, a West of England, an Essex, and a Norfolk winner. He was also distinguished at Altona in Prussia, and many other places, and he will win again. The cup for best pigs in the yard goes to Mr. Keyworth's "sow of the middle breed," a very good animal; but we think not equal to two or three other animals. The small breed sow, the property of Mr. Duckering, we should proclaim to be Queen of Beauty in these "lists." "Little Queen" is well known to fame, and in this instance beats some choice and

male. Mr. Sagar's second-prize sow has the best head we ever saw; but she is growing the worse for wear.

The poultry is a great success at this show. The Leeds Society has followed the example of Birmingham in encouraging this department; and the public has responded, there being large entries of poultry and of pigeons.

The Game classes were a large show, from 20 to 30 in each class; and the birds generally good. The Dorkings were a good show in numbers, and in quality rarely equalled. The year-old birds, which took the first prize and cup, weighed 10lbs., and were the property of Mr. Maud, Leeds. Mr. T. Kell, Wetherby, took prize for Dorking chickens weighing upwards of 8lbs. each! Brahma Pootras were a very fine class; the Fowls also were a capital lot; and the Hamburgs, in all classes, were an extraordinary show, and equal to anything ever seen.

Bantams in every class, but especially black, were numerous

and good. Ducks, geese, and turkeys were also well represented. The price at which owners value their birds is most probably put in to discourage applications to purchase; otherwise £50 for a black bantam and £100 for a couple of geese are fabulous figures to attach to even fancy birds.

In a very good show of roots some splendid swede turnips, grown by Mr. William Ripley, of Kirk Hammerton, won the first prize; they weighed from 14 to 18lbs. each. The man-golds were also very large and handsome.

The financial results of the meeting have been very satisfactory, the receipts being 50 per cent. over last year. There was a strong attendance on each day from the country, and in the evening the town population attended in crowds.

JUDGES.—Cattle and Sheep: J. Ruddock, Berwick-on-Tweed; J. Knowles, Wetherby; H. Spurr, Sheffield. Pigs: G. Hutchinson, York; S. Barret, Harewood. Poultry: E. Hewitt, Birmingham; R. Teesbay, Preston.

THE CENTRAL FARMERS' CLUB.

A FARM AGREEMENT.

The concluding meeting of the Farmers' Club for discussion during the year was held on Monday, December 6, in the Club Rooms, Salisbury Square, and was numerously attended. The Chair was taken by Mr. R. J. NEWTON, President for the year. Mr. R. H. Masfen, of Pendeford, Wolverhampton, introduced the subject on the card—viz., "The Common Form of Farm Agreement as Tending to the Fullest Development of Agriculture."

The CHAIRMAN said, important as the subjects discussed during the present year in that Club had been, he could not but think that the topic on the card for that evening was at any rate as important as any of them, and to his mind it seemed even more important (Hear, hear). It was certainly a subject that deeply concerned the whole agricultural body of Great Britain, while indirectly it concerned the entire community. The title of the subject suggested the important question, Do the present forms of agreement answer the purpose expected—namely, the full development of agriculture? He would at once frankly say that in his opinion they did not. In these days farmers were urged on all hands to use their utmost efforts to improve the culture of the land through the application of steam power, the extensive use of artificial foods for the feeding of cattle, and of artificial manures for the growth of roots, and of course all that meant the employment of an increased amount of capital. Again, the question arose whether under present circumstances there ought to be any restriction as regarded the mode of cropping. In his opinion there should not. He thought that, with the farming of the present day—he was not speaking of 30 years ago—every restriction as to the course of cropping ought to be removed. If a man kept his farm in good condition, so that the land was sure to grow a fair crop, that was, he thought, all that could justly be required. He had remarked that the subject on the card involved the introduction of a larger amount of capital. That suggested another question, Do the present forms of farm agreements allow farmers a fair return or equivalent for the capital which they have invested when their occupations are vacated through death or other causes over which they have no control? Again, he answered in the negative. It would be out of place for him to suggest anything which might have a tendency to remedy those defects, so that might be anticipating the remarks of the introducer of the subject, and he would now at once call upon Mr. Masfen to proceed, only adding that the subject was one which

required to be ventilated, and that, in his opinion, the more it was ventilated, the better it would be for the farmers of England and the community generally.

Mr. MASFEN then read the following paper:—The subject we are assembled to discuss this evening—"The common Form of Farm Agreements, as tending to the fullest Development of Agriculture"—is one of importance not only to the owners and occupiers of the land, but to the consuming population of this great and increasing country. I trust I shall not disappoint the Committee, who requested me, through their Secretary, to introduce this discussion, by reading to your Club this short paper. In dealing with it, I shall have occasion to refer to opinions expressed by different gentlemen and agricultural bodies, who are more able to give a practical solution of this matter than anything I can do; and I will here express the obligation I am under for any ideas or expressions I may have received either from them or their writings. The first consideration must, as a matter of paramount right, be given to the owner of the soil, and in such a manner as is least likely to prejudice the interest of the occupier, extending to the one security for the investment of his capital, and to the other an assurance that the property shall not be depreciated by any incongruous act of an unscrupulous individual who, by misfortune or otherwise, might be disposed to act in a manner at variance with the recognised systems or principles of good husbandry. In introducing this subject to your notice, you are well aware that it is not its novelty that caused the Committee to select it for the concluding evening of this year's gathering, neither can I plead ignorance to some of the most striking features which, at this time, seem to be occupying the attention of the agricultural community; for during the last few years it is a rare circumstance to take up a paper where you do not find that various agricultural bodies have been discussing the very subject we are met together to propound this evening. The mere relation of landlord and tenant creates an implied obligation on the part of the tenant to use a farm in a husbandlike manner, according to the customs of the country where the premises are situated, unless the lease or agreement contains some express covenant or promise inconsistent with such customs and sufficient to exclude them. It is extremely difficult accurately to state the various customs prevailing in different counties, and it is still more difficult in practice to determine to what extent those customs are, or are

not, inconsistent with the special stipulations in agricultural leases or agreements. All disputes should be submitted to arbitration and settled in the usual manner—the customs give way and the express contract prevails. The agreement should be both agriculturally as well as legally good: litigations on agreements and customs can be best controlled by mutual arbitrations between landlords and off-going and in-coming tenants and by the non-adoption of numerous stringent and complicated farming clauses, which are now too frequently introduced, but are of little or no practical value. I often hear expressed that a good understanding between landlord and tenant is an antidote for all ills that may arise between them. No one more highly values the advantage of that good understanding; but that is not all that is required. In how many cases is a considerate landlord succeeded by a spendthrift son, or his trustees? or what guarantee have you that the property on which you are placed may not for a hundred reasons change owners? It would not be necessary for me to give illustrations of the great hardships brought unintentionally upon old tenants by their landlords, in ways the least apprehended by either party, or by circumstances over which they had no control. In the compiling of agreements one fundamental principle must alone be recognized—the owner, the occupier, and the labourer each receiving the consideration due to their respective positions. The owner of the soil is entitled to paramount consideration, which should not be entertained to the injury or disparagement of the others, for be it remembered that an amount of obligation is also felt by the farmer in a degree, which the circumstances of the case demand. The laws of property extend protection to the one, which the other does not enjoy: hence we are naturally led to ask. What is the corresponding amount of capital which a tenant, who is subjected to a six months' notice to quit, has embarked in the occupation, as compared to the relative value of the fee simple of the land? Statistics are not palatable to those who listen to papers of this kind, and tend frequently to embarrass the introducer of a subject, let his information have been derived from the most reliable source. Mr. Mechi's statement of the amount of capital required to farm well and profitably, goes far into the subject before us. As an illustration of the position necessarily existing for better security, if £15 per acre is required, it is one-third the value of the fee simple of the average land of England. The owner, the occupier, and labourer are so identified, that any assistance given to the one is appreciated by the other, as tending most directly to the interests of all. The service of the labourer is so indispensable, that it forms one of the most important elements of success. Without his help, you find the motive power completely scotched, therefore he is not the least worthy of consideration in the subject before us. Each one is a necessary element in the success of the other, the one cannot look for prosperity when the other is not regarded. It is not my wish or intention to stretch out such an array of illustrations as will tend to disparage the one, or claim for the other that consideration which is not due to them. Residing as I do in the mid-land counties, and in a county where I think the great landed proprietors have done, and are doing much in assisting their tenants to develop the resources of the soil to a greater extent than formerly, it must not be inferred that my voice of complaint is raised against *them*, but from a feeling, ay! a knowledge that in many parts of this kingdom there is not that amount either of help or consideration extended to the tenant farmer, either by the landlord or his agent, that is required for a fuller development of the soil. I hope in the paper I have before me I shall not be considered diverging too much from the title it bears, by introducing in various parts matter referring to the social bearing that the three classes, landlord, tenant, and labourer have upon the important question, and how desirable it is that each should progress in accordance with the spirit of the age. This leads me to consider the necessity for a better and more liberal education of the sons of farmers; I view it as one of the most important elements of success. The machinery of the present day is so costly, so are the various scientific discoveries and appliances which have been brought to light, that it renders a liberal education indispensable; and that education it is most essential should be brought within their reach, at a moderate rate. The mere elementary education which has satisfied too many of our class, is to be regretted. What is necessary for the improvement of agriculture is, to attract capital to the cultivation of the soil, by placing in the hands

of every tenant a *good and liberal agreement*. Let the term of tenure be either long or short, afford to the occupier a fair opportunity of a return for the investment of his capital, and at the expiration of his tenancy a fair remuneration for unexhausted improvements. There are many counties where such arrangements are now made, and you need not inquire in passing through any county or district the sort of understanding that there exists. What I and all who think and act with me are desirous of seeing is, "the exception become the rule, and the rule the exception;" let the production of this country be 50 per cent. over its present return. There is a growing feeling in favour of an extension of the principle I so much desire to see carried into general practice. It is not to be supposed the same agreement will suit all soils, or be compatible with the views of all, but, as I before said, all should admit the principle. During the years I have been engaged in the profession of agriculture, circumstances have arisen which never entered the heads of our forefathers, hence so much dissatisfaction is expressed to the agreements, which have not been revised during the last 20 or 30 years, when some of the covenants there introduced, and still retained, are contrary to existing views, and unsuited to the enlightened age in which we live. "Red tape" had too much to do with farm covenants, and in too many cases I fear continues to hold its sway. By this I mean, that when you ask an agent to allow a certain clause or clauses to be removed before signing it, in reply you are told, "Oh! it is of no consequence, you need not take any notice of it, or make exception to it; we don't intend to take it literally, you will not be expected to farm up to those stipulations." Then, I ask: Why allow them to appear? Why not at once remove them? If they are useless dispense with them; if they are of moment insist upon their remaining, and see that your agents insist upon their due fulfilment. "Red tape" placed them there, and in times when the requirements of the land were not so well understood as in the present day. Some few years ago I was one of the individuals who had to award a premium to the best form of agricultural agreement, and I entered the arena of competition, and the thing which struck me most was, *not* the amount of good ones set forth, but the number that appeared in form at the present time. If one-half of their stipulations were entered into, it would place the occupier in a position the landlord never contemplated, and would be attended with no advantage to the estate. It is no wish of mine to insert a ruthless hand, but I contend that it is desirable for all classes that useless clauses should no longer be introduced in farm covenants, which irritate the occupier and find food for that portion of the press from whom we have no favour, but are used as fair weapons with which they make us a reproach to the various classes whose attention they may attract. When we compare the quantity of food and other raw products obtained from a given surface of a well-cultivated country with those obtained from the same extent of an equally fertile country occupied by hunters and shepherds, the powers of agricultural industry in increasing useful productions appear so extraordinary that we cease to feel surprise at the preference which has been so early and generally given to agriculture over manufacture and commerce. Men's attention was first called to the occupation of husbandry, and although we live in a country where the mineral resources have so far placed us in a prominent and enviable position in the scale of nations, our profession must always be "the true barometer of national prosperity": commerce and manufactures pass away; the land alone continues to the end of time. Agriculture, in which I am deeply interested and a zealous and ardent supporter, is the most ancient and not the least honourable occupation in which man is engaged, and I trust I may never be found backward in giving any and all the assistance in my power to remove *some* of the trammels which tend to impede its necessary progress. The agriculture of this kingdom has been labouring under a transition state during the last 20 years, as we know by that period's experience; great changes have been brought upon us, over which the laws of nature had like ourselves no control. Political economy has brought us to a widely different state of things to that preceding the Repeal of the Corn Laws and Sir Robert Peel's Bill permitting the importation of foreign live stock. The principal or staple commodity with many farmers was *wheat*; but from the reduction in its value, caused by the great importations of foreign grain, his attention is naturally turned to another source of profit, viz.: the

production of a greater amount of animal food and wool. The altered circumstances of the case, and the necessity for the employment of a large amount of capital in the occupation of land, render many of the agreements that are now, and have been in force, a clog and a hindrance to that full development of the power of production from our own native soil which the ever increasing population of this country demands. The additional number of live stock, and the enormous amount of artificial food and manures now used, the steam engine and improved machinery being necessary for the production of the same, render that investment imperative. The great obstacle to the improvement of the general agriculture of the country being, as I before stated, the absence of capital, is I fear too frequently encouraged by the number of applicants for farms, and the unwillingness on the part of the agent to inquire more fully into the means at the disposal of the various applicants. We are often reproached for not bringing more of the commercial element into agriculture, and with some degree of force it can be said we are to blame; but our position varies materially from the position of commercial men. If a business in one place does not answer his purpose, he can, with little loss of capital, remove somewhere else; but when a farmer invests, he runs a great risk of losing considerably by the change. Hence it is that other arrangements are imperative for the amelioration of our class. The isolated position of the agriculturist must ever be a disadvantage to him. Before the introduction of railways, we had few opportunities for the interchange of opinions; this I view as our misfortune, not our fault. It is now nearly thirty years since the originators of this Club, who were fully alive to the disadvantages under which they were labouring, determined upon the establishment of these gatherings, the success of which is apparent to all. In taking a financial view of the comparative difference in the expense of assembling a number of gentlemen of our class in this room, and an equal number of the citizens of London, at any given place in their own city, to discuss their general interests, I think the position of the one will compare more favourably to the other than the outer world are disposed to extend to us. In the year 1868 the Royal Agricultural Society offered a premium for the best form of agricultural agreement, or an essay upon the same; and the gentleman who took the prize, gave us a form of agreement which met the views of the Council more fully than any other—and I do not think I can proceed better than by laying before you some of the clauses introduced therein. The Royal Agricultural Society, in awarding this prize to Mr. Cadle, recognise by their act the existing necessity for more liberal covenants. When we consider the importance of that Society, and the position held by those gentlemen composing its Council, I think it must be apparent that a great object is gained, from the fact of such an agreement appearing in its Journal. I do not know what competition there was for the prize; neither is it necessary that we should be acquainted with that fact. The recognition of the necessity for an agreement, in accordance with the altered circumstances of the times, and an endeavour to remove the trammels so often introduced, which prevent the utmost development of the soil, and the acknowledgment of the principle that it is necessary to give the same protection to the capital invested in the occupation that is afforded to the owners of our broad acres—this recognition I consider by the representatives of the first agricultural society in the world (when we know that in the constitution of that body over 70 per cent. are either landed proprietors or their representatives), should carry a weight with it, the effect of which must be felt far and wide if they earnestly assist in carrying out their recommendation. I do not know how far my views may be endorsed by the members of this Club, but if the motive power of the Royal Agricultural Society will assist in carrying out the revolution proposed in Mr. Cadle's agreement, I think we have grounds for hope that a point is gained, and we shall soon find a better system than the present unsatisfactory mode of meeting out justice to quitting tenants. Although the successful competitor is a stranger to me, I have had much satisfaction in reviewing his essay, and can distinguish the practical knowledge of the writer. He tells us it is compiled from various sources, and embodies the best part of Lord Lichfield's agreement, which he considers as complete as any he has seen. I have much pleasure in referring to the name of that nobleman, feeling sure there is no one who knows him as well as I

do who will not feel that any improvement introduced by one so desirous to ameliorate the position of the British farmer, should receive that amount of consideration at the hands of the landowners generally which this great question deserves. It will not be necessary for me to go *seriatim* through the various clauses introduced in Mr. Cadle's essay, but merely to refer to some of the principal parts where a difference of opinion may arise, and where anything so completely opposite is proposed to anything now in general use. This agreement sets forth that the straw, hay, &c., all belong to the landlord, and that the hay, straw, fodder and roots of every description be consumed on the farm, except that certain quantities of hay, straw, and roots may be sold, the full value being returned to the farm in the shape of cake or artificial manure. Now, this is a boon not generally given to farmers, and the great waste you frequently see of straw, where a tenant is compelled to consume it all, is such as to render it little better than rotted straw, returning nothing fertilising to the land for succeeding crops. Referring to the sale of hay and straw, returning the value to the land in purchased food and manures. Railways have done much to render this desirable, finding a ready market for the production of the farm, and the facility for returning the elements for greater productiveness. Another clause not generally found is, that a tenant may sow two white straw crops in succession; now this, I think, will be advantageous in many localities, and not injurious to the land; it has been so in my case, having frequently found a great difficulty in the growth of clover, and in each case, when I have adopted the second white straw crop, preceded by a liberal application of manure, the result has been a satisfactory root of red clover. Mr. Cadle proposes compensation for artificial food and manure, and *that* on a liberal scale, and I think it will meet with many supporters; as far as the *food* is concerned I will go with him, but I am not disposed to sanction his views as regards superphosphates—the last year but one for a manufactured manure. The *last* year in my opinion goes far enough. For draining and all permanent improvements in building, fencing, laying down grass land, and planting fences and fruit trees (the sanction of the landlord for all improvements being given) I fully endorse his proposals, and coincide with his general mode of compensation for the various appliances referred to as the productive elements which a tenant, farming highly, must leave for the benefit of his successor. In all agreements, the great object to be kept in view is to place such an one in the hands of all men, as to give them the greatest inducement to farm well up to the expiration of their tenancy. The great failing in covenants is the absence of any inducement to farm well to the end of the term: no policy can be more mistaken. In clause 9, stipulation is made for all land seeded to be paid for, if clean, 5s. to 30s. per acre, at the discretion of valuers, in addition to the clover or grass seeds sown; thus returning to the tenant an equivalent for good cultivation, for which he would receive no direct benefit, but is enjoyed by his successor. In a discussion at the Midland Farmers' Club, Mr. Randall, of Chadbury, alluded to the absence in almost all agreements for stipulation for clean farming. He proposes that, at the expiration at Michaelmas of any year, half the arable land shall be fit to plant with white straw crops; one moiety shall have been fallowed with green crops during the previous summer; the other moiety shall have been wholly under clover or mixed grass seeds, or part in clover, the rest beans and peas; after being manured, none of the clover or grass seeds being allowed to stand for seed. He requires that not more than one-fourth of the arable land should need to be fallowed in the year after the termination of the tenancy, nor require an outlay of more than £2 10s. per acre to clean it; if it required less than that sum the landlord or the in-coming tenant to pay the difference, if more the out-going tenant to pay it. Then follow the compensation clauses: Not less than one-fourth of the clover or mixed grass seeds shall be mown for hay during the last year, for the use of and to be paid for by the in-coming tenant; for the remainder of the land, whereon clover or other grasses have been grazed the whole summer by sheep, the in-coming tenant shall pay after the rate of 40s. per acre, provided such land be clean and that only one crop of corn has been taken since the previous fallow. There are other covenants that relate to the purchase of manures, which are dealt with in the manner proposed by Mr. Cadle. With one exception, Mr.

Randall proposes that one-half the proceeds of the hay, straw, &c., sold be returned to the land. Much diversity of opinion exists on the time of quitting and entry on farms; it is contended in some localities that Michaelmas is a more desirable time for change than Lady-day. It is not general in my locality; but on several occasions I have valued on farms where a change has taken place at Michaelmas, and in those cases I have found it has given satisfaction. In the Michaelmas change one thing is apparent—that the off-going tenant can clear away, and that the in-coming tenant, by paying for the produce, which is then secured, is at liberty to proceed in all matters without hindrance, and carry on the various operations of the farm, which are often very unsatisfactorily performed by an off-goer who leaves at Lady-day. I should here observe that, although I oppose any set rule of cropping, considering it quite unnecessary, I should require the farm to be given up in a certain course, although the valuers would never consider a farm up to the required standard of good husbandry when a preponderance of any one crop or state of cultivation prevailed. A landlord has an agent, whose business is to attend to his estate, who must keep a schedule of the cropping on each field on entry. All men in charge of estates should be thoroughly practical, who could at once discover any tendency on the part of a tenant to reduce the standard of his farm, of which he should remind him; and, in case of a second intimation being found necessary, he should give him notice to quit, and remove him. This would be attended with much more salutary results than requiring him to sign a stringent agreement and farm by it, believing he could do little injury to the property, when each succeeding year might find him and the land in a worse position than the last. As a general rule, it is bad for all classes that he should remain. This, I fear, has had more to do with impeding the progress of British agriculture than many are aware. A great landowner and myself have many times spoken of this subject, and on one point we could not agree; but recently, I am pleased to say, he has entertained my views. I always contended an agreement should be made to suit a good tenant. He said, "No: there is no necessity for one with a good tenant. They are required to make bad ones farm better, and against any fraud that might be practised." My reply was, "Give liberal agreements, and the number of bad tenants will soon be reduced to the lowest possible point. All practical men know much land is improved by the aid of artificial food, and the extent of benefit it derives from a liberal diet to domestic animals. The return for invested capital is not expected to be made by the animals who consume the food, but from the fertilizing properties of the manure: hence, you see, the want of recognition in all farming customs of ancient date. It is now an ordinary thing for men to expend annually sums amounting to half, or in many cases to even more than the rent of the land: it is, therefore, self-evident that, under a six-months' notice to quit, and no saving clause in an agreement to protect a tenant from contingency, it is obvious improvement must in a great measure be retarded. It must not be imagined that the present occupier is the only party interested in these things; the landlord also, and the in-coming tenant, are equally concerned; and, as I said previously, I view it as a great national question, and in no other light can I consider it should be introduced to the community at large. In some instances the manure upon the farm belongs to the tenant; he pays on entry, and, as a matter of course, receives for it on leaving. In that case there is no object gained by lowering the condition of the farm. If he has a limited quantity of manure on entry, and leaving a larger proportion at the expiration of his tenancy, he receives for all additional, and is thus recompensed for the expense to which he has been by that increase. This is considered by many farmers the best form of occupation, and as one of the best of all old agreements has certainly much to recommend it. In other counties there are various customs in general use, called compensation for dressings and acts of husbandry, that find favour as tending to a good state of husbandry; the off-going tenant receives compensation for the last year's artificial manure bill, deducting certain sums for the roots, as per the mode of consuming them. Another most important consideration for the tenant is to see that he stipulates for the provision of good cottage accommodation. We are often told we provide our cattle with comfortable and warm shelter, but the lodgings of our agricultural labourer is not

taken into consideration. This is a thing that requires attention; proper accommodation within a reasonable distance from his labour should be provided. The Union Chargeability Act has in some measure removed an obstacle in the way of this great good, but there is much still to be done to make the matter as satisfactory as I could wish. Lord Leicester expressed a good opinion upon this subject a few years ago. He told us that in improving the dwellings of the labourer we were not to expect a return for our capital direct, but must charge the additional convenience we receive with some share of the expense incurred, which should be borne by both landlord and tenant; and in that view I think he would find many of those best able to express an opinion join him. The labourer must be better educated, and with that increased education you fit him for a more elevated position in the social scale, and in no way so well reward him, as in increasing the happiness of his own freidae. Education enlightens him, and should make him a better labourer, and that same information makes him more alive to the position in which he has been too much of a reproach to our class and of commiseration by another. I believe the agricultural labourer of this kingdom will bear favourable comparison with the operative classes generally, still I consider there is necessity for his condition being improved, the requirements of the age make the service he has to perform more intricate than formerly. The education of the labourers' children will occupy the attention of Parliament during the next session, and I trust that in dealing with it provision will be made to educate them to the position they are expected to fill; and if in addition to their book knowledge some scheme can be devised for their technical education, an additional object will be achieved. The steam engine, plough, reaping machine, in fact every new appliance for the general cultivation of the farm, is rendered more valuable, the amount of property in the shape of machinery more costly than formerly, hence you require a better man, as more intelligence must be brought to bear in nearly every branch of labour in which he is engaged. The next is one of the most difficult questions to deal with in connection with landlord and tenant, I allude to game. Mr. Cadle, in his agreement, provides for the destruction of rabbits all the year, and for no dog during the breeding season, which is quite right, and with the general stipulation I agree. With regard to compensation for damage done by game, I cannot coincide with the proposal, knowing from practical experience the evil attending the clause, viz., "To allow for all damage done by game exceeding 20s. per acre for each and every acre so injured," and the delusion it has been to hundreds of tenants, to suppose they are secured against damage (which apparently they are); but at the same time, in grasping at the shadow, they too often lose the substance. This is apparently a practical solution of the difficulty, but I fear it is only the beginning of greater differences than at first sight appear. I have frequently been called in to assess damages done by game, and all who have been similarly placed will agree with me that it is surrounded by a variety of disagreeable circumstances. You must first as per this agreement submit to an amount of damage, receiving no compensation; you then have to make a claim of a nature not the most agreeable, and no claim is viewed either by a landowner or his advisers with a more jealous eye than the one alluded to. I will ask you as practical men. In how many cases of this kind have you not found that a notice to quit has followed on almost the very next opportunity after such a claim has been made? if, gentlemen, you have not, I have. When consulted upon matters of this kind, my first question is, Do you value your occupation? if so, do not do anything likely to irritate your landlord, or those in his employ, for it must be well known there are besides the owners those who are often fully as difficult to deal with in things of this kind. I believe no greater evil exists than this over preservation of game. I am sorry to see in many localities great tendency to that end, the un-English fashion of "batter shooting" finding favour with too many. I should be sorry indeed to deprive noblemen and gentlemen of the recreation afforded by the sports of the field; every good tenant wishes and is proud to find his landlord a good day's sport, and happy to entertain him and his friends. Another most objectionable practice on some estates is to introduce a second tenant to *setting* the game. This should *never* be done without first offering it to the tenant, and if he refuses to have it at all value placed upon it when he takes the farm (which shows

always be a fair one) the landlord should then be considered at liberty to deal with it as he thinks well. The case of Mr. Dickson, tenant to the Duke of Portland, is familiar to many, and the state of things there disclosed, where game, was set to a company, and the unpleasantness which ensued; and there are hundreds of cases which I fear are much on a par with it. I look for the whole question to be more completely set at rest by public opinion being brought to bear upon it than anything else. Men and things are more influenced by that than by any other power. The law now gives the tenant the game, but by a voluntary act he resigns his right to the owner, feeling at the same time he has little option in the matter. But here I could observe that in all cases where land is set at a reduced rent for the over-preservation of game, it is only just that the rates should be in the same proportion the land would yield if there was not that joint occupation, which arrangements of that kind must be considered. We are now frequently called upon to pay rates for its protection, adding to our rates by the fact of police being interfered with in their useful work, by being called upon to protect some ardent sportsman's game and assist his keepers. Nothing tends more to fill our goals and workhouses; and be it remembered that no class contribute so largely to the rates of this country as the occupiers of the land, and with the imperative necessity that exists for producing a larger amount of food for the increasing population of this country, the public require that every obstacle should be removed that interferes with the largest amount of production for their use. It is not well to attack private interests upon public ground, but if there is one question more than another where that is admissible, it is on the subject we are now considering. Agricultural energy, enterprise, and skill are much retarded by localities where you have an over-preservation of ground game, and, assuredly, the interests of the many should receive a prior consideration to the pleasure or caprice of the few in support of that system which makes less than valueless some thousand acres of the best land in this kingdom, and compels us to seek food for our teeming millions, from sources which could not add so much to our natural prosperity as when it is produced from the sources within our own command. I refer to those instances where there is an excessive preservation. There is one remark I wish to make upon the rabbit clause in Mr. Cadell's agreement; it provides for the destruction of them at any time, but there are hundreds of farms where rabbits never remain on the land during the day, although at night they visit you by hundreds, to the utter destruction of your crop. Now, in cases of this sort, the stipulation affords no remedy, you have no power to enter the coverts where these pests of the farm take shelter during the day, and to attempt to interfere there would be considered sacrilege. I know two instances under my own observation where the tenants have great damage done them, and where the privilege of catching is given as stated in the agreement: they both say they could not kill a couple if they were offered a hundred pounds for them. In one case a small covert adjoins some arable land, and in three years over one thousand head of rabbits have been shot and otherwise killed in the covert, but not one single head outside. Now where, would I ask, were all the one thousand fed? by whose property were they rendered a marketable commodity? There never was a time in the history of this kingdom when the question for discussion this evening presented itself to us with the same force as the present. In feudal times, and when men made laws to protect their own individual interests, as of yore, the will and action of the one was subservient to the other, there was then little fear of the one moving more rapidly than the other thought desirable to proceed; but now the case is widely altered. We are placed in competition with the world, and that competition becomes keener every day. The great resources our continental neighbours are bringing to bear compel us to move at an equal pace. Railways, canals, and all means of locomotion are extending themselves as rapidly there as at home. The amount of our machinery which is exported year by year must tell its own tale; and whether we are disposed to look with enviousness, or bestir ourselves, it is evident to me that the great changes which we have witnessed during the last few years are only the beginning of the great transition to which I before alluded, and render every effort we can make desirable to keep pace with foreign competition. The great resources of Russia are now being developed by the

extension of railways, bringing grain to the ports at a price never before known. America, who is now recovering herself from the calamity occasioned by internal commotion, will be found a greater exporting country than before, the great drain of the over-population of our sister island doing much to develop the best resources of the virgin soil of the Far West. All these, I say, point, with more force than I can express, the necessity there exists for the removal of every unnecessary hindrance to the fuller development of our native productions. When we review the amount of imports of corn, wool, bacon, butter, cheese, eggs, &c., which annually reach our shores, it must be conclusive to every one that we can only keep even in the race, not only by the removal of all obstacles, but by emulation and encouragement. The interest of the landlord (or I would rather say supposed interest) alone being considered an amount of superfluous matter, being introduced and still insisted upon in farm covenants, acts as a certain barrier to a better cultivation of the land. Let two estates contiguous to each other be set on terms to suit the ideas of men entertaining opposite views upon this question, and I will undertake to say that in five years the tenancy and the appearance upon the one will contrast very differently and most favourably with the other. I am unwilling to believe that there are men to be found who would wish to hold their tenants in bondage as it were, but in honesty I am bound to say I have heard a landlord say, "Smock-frock men are the tenants for me." If such a state of things exist, and I believe it is only in isolated cases that they are to be found, this Club will join with me in expressing an opinion that landlords with these views are as much to be pitied as the unfortunate men who become their tenants. The attention of Parliament will be called next session to the land question of Ireland. I do not hold an argument in favour of fixity of tenure, but what I say every agreement should give is this: A fair compensation for unexhausted improvements. Only recently a landlord told his tenants and the general public at an agricultural dinner, that his tenants felt as secure as under a hundred years' lease; and so they may, but he did not tell them of the hundred and one circumstances that might arise to make them consider that the long reposed confidence had been misplaced. How many sales of large estates are going on every year and breaking off old connections! and it must be borne in mind that there is no old association between our millionaires and the tenants of a century upon old territorial possessions; one single discordant sound of the auctioneer's hammer dissevers those ties which preceding generations would have scorned as idle dreams if the slightest insinuation had been made of their possible termination. Has not the uncertainty of life, too, on the part of the occupier told its sad tale to too many widowed mothers and fatherless families? the *all* spent in putting a farm in a good state of cultivation, with the hope of a profitable return for the investment, when the ruthless hand of the destroyer has made desolate that once peaceful, confiding, and happy home. It requires more of the stoic than I command to say that this is a desirable state of things. I am no alarmist, and I hope this Club will not consider I am painting an exaggerated picture. I fear it is in the power of too many who hear me to endorse to the fullest anything I have sketched, in setting forth the various modes in which these questions may be presented to the world in a true and instructive, but not in the most agreeable position for them to be portrayed. When this Club last assembled here it was to listen to one of the most elaborate and instructive papers ever read before it. I have had much pleasure in perusing it, setting forth the comparative difference between continental agriculture and our own. I was prepared to hear we were ahead of them, but we can plainly see, from the information Mr. Howard so kindly conveys, that as rapid strides are being made there as here, and gives the same warning to us, which I thought well to make in a preceding part of my paper. Irrigation and sewage, which he points out as being carried on in Italy and Switzerland, are bringing about great changes in those localities, and are deserving the attention of both owners and occupiers, who should realise the necessity for rendering available all possible matter for the reproduction of fertility to the soil, and make serviceable that which in some districts is injurious to the locality and prejudicial to health. The large and important town of Wolverhampton is at this time preparing to convey their sewage, for the purpose of irrigation, to a farm adjoining my

own occupation, the progress of which undertaking I watch with much interest. Mr. Howard speaks unfavourably of small farms, and the honourable member for East Norfolk, Mr. C. S. Read, confirms the opinions he expressed; and within a few miles of the neighbourhood in which I reside, I have seen enough to convince me of their undesirability—prejudicial alike to the owner, the occupier, and the labourer. Small farms are let at a higher rent than larger ones, and such must of necessity be the case as security against loss, and from the general want of capital upon such occupations much less return is made. To the labourer, no doubt the large farms are of the greatest advantage, giving continuous employ, and on the other only occasional occupation, which I believe to be most dangerous to the labourer, as well as being attended with consequences disastrous to his family. No one with half-employment can be considered a desirable labourer; they are frequently the worst men, and when partially occupied, generally require higher wages than are ordinarily paid—and this has the effect of making them dissatisfied with that fair and equitable compensation which is extended to men in constant employ. Hence it is conclusive that small holdings pay for casual and temporary labour a higher rate of wages than larger ones. One word upon Scotch farming and leases: As you are aware, in Scotland the general system of tenure is by lease of 19 or 21 years, renewable at a certain period, prior to the expiration of the term specified. The system of farming there has much to recommend it to our notice—land well-farmed, masters and labourers happy and prosperous, the amount of capital there invested contrasting very favourably with that of England. No complaint can there be heard of the uncertainty of tenure, and the want of security for invested capital; the tenant immediately makes a liberal investment with an assurance that there is an opportunity during his term to reap the reward of the same—and it is as applicable to the case of a yearly tenancy, if the security which Mr. Cadle sets forth in his essay be acted upon. We were told by the late Mr. Grey, of Dilton, a lease will bring a barren heath to the productiveness of a garden, and that a yearly tenancy will return the garden to its original desert state. This cannot and must not be considered a tenant's question only. I feel persuaded that if either of the systems here proposed were generally adopted, it would tend more than anything else to increase the value of the land of this kingdom, and would give nearly cent. per cent. more available food for the people. And is this, I say, a thing of slight moment, when we consider that in the last three years we have imported into this kingdom grain to the value of £37,000,000, and £5,000,000 annually of live stock, irrespective of the value of butter, cheese, bacon, eggs and wool, all of which find a ready market here? Mr. Allison has recorded an opinion that the husbandry of Flanders in our plains, and of Tuscany on our hill sides, would easily raise food enough for double our population. Mr. Smith, of Deanston, whose name will everywhere command respect, has expressed his conviction that by draining and subsoiling alone, leaving the question of manure out of sight, that Great Britain in 20 years will become a corn-exporting country; while Professor Johnstone, in his lectures upon agricultural chemistry, expresses his deliberate conviction that, as a whole, this island does not produce one-half the food for man which it might be made to bear with profit to the farmer, and which by the time our population is doubled he believes will be found readily to yield. His Royal Highness the late Prince Consort, who took so deep an interest in the progress of agriculture, in one of his speeches said: "Agriculture, which was once the main pursuit of this as of every other nation, holds even now, notwithstanding the development of commerce and manufactures, a fundamental position in the realm; and, although time has changed the position which the owner of the land with his feudal dependants held in the empire, the country gentleman with his wife and children, the country clergyman, the tenant and the labourer, still form a great and, I hope, united family, in which we gladly recognize the foundation of our social state. Science and mechanical improvement have in these days changed the mere practice of cultivating the soil into an industrial pursuit, requiring capital, machinery, industry, skill, and perseverance in the struggle of competition. This is another great change, but we must consider it a great progress, as it demands higher efforts and a higher intelligence." His Grace the Duke of Marlborough so

aptly said: "Whatever the material prosperity of the country may be, it must be based on that which supplies the resources of natural life and vigour to the nation." Sir John Pakington also "repudiates the idea of a man placing confidence in his landlord; let him treat it commercially, and place his trust in a written document." If then we are to credit these assertions—and I fully believe to a great extent in their correctness—I ask my brother farmers if we should not be "Up and doing." The name of Earl Ducie is familiar to most in this room; his views upon the question before us are clear and concise. At an agricultural dinner he thus addressed those present: "Those farmers who look with dislike upon the progress of improvement, under the impression that it operates against themselves, could not entertain a greater mistake, for go through the length and breadth of England it would be seen that where the landlord was found the most enlightened, the tenant was found in the most flourishing circumstances; the tenant knew his duty to his landlord, and the landlord to his tenant. No question could affect more the relative position of both parties than that of leases, and his opinion was, that till that question was fairly and clearly understood, all their efforts after improvement would fall short of what they ought to be. He (Lord Ducie) would give every tenant a lease, but in return he must have intelligence. He considered a man a fool who invested his capital without security." Mr. Randall says, that by sensible and business men, a lease was considered most desirable, but we are often told by landlords what we know to be a fact, that in very extensive and highly cultivated parts of the country (he alluded to Yorkshire and Lincolnshire) land was occupied from year to year. The farms in the neighbourhood alluded to remained from generation to generation in the hands of the same family of tenants, who considered if they had leases their farms would be re-valued, and might be called upon to pay an increase of rent, which increased value was mainly due to their own industry and outlay. I need not in concluding this paper, detain you more than a few minutes in taking a summary review of the points which I think of the most importance for the better security of invested capital, and for the mutual progress and advantage of all classes. In the first place I feel bound to express my opinion in favour of a lease, considering it the best security for investment of capital tending to the independence of the occupier, and an increase of value to the landlord, with a largely increased production for the benefit of the nation at large. Secondly, in cases where an objection is made to granting a lease a liberal tenant-right should be given, extending a scale of compensation for unexhausted improvements, and for clean farming to such an extent, or in an equal ratio to that proposed in the agreement selected by the Royal Agricultural Society, and with at twelve months' notice to quit. Having referred to some of the first men of the age, and adduced the opinions expressed by them and of those now removed from us, whose memories are still dear, and considering the views they entertained and expressed bearing upon this subject, and to which I will here again call your attention, his Royal Highness, the late Prince Consort, aptly alluded to the position we occupy in the social scale. I have referred to Lord Lichfield from the interest he has always taken in the welfare of the British farmer; to his Grace the Duke of Marlborough, to show how much the prosperity and vigour of the nation depends upon the supplies of the resources of natural life; to Earl Ducie, the late Mr. Grey, of Dilton, and Mr. Randall, on the advantages of leases; to Mr. C. S. Read, M.P., and Mr. J. Howard, M.P., on the comparative advantages to the public of large over small farms; to the late Mr. Smith, of Deanston, on the value of drainage and subsoiling; to Professor Johnstone and Mr. Allison, on the practicability of largely-increasing the production of our broad acres; to Lord Leicester, on improving the dwellings of the labourer; to Sir John Pakington, for the necessity of treating contracts between landlord and tenant commercially; to Mr. Mechi, as tending to show that a much larger amount of capital is required for the improved cultivation of the land; to Mr. Howard, in drawing our attention to the importance of irrigation and sewage; to Mr. Cadle and Mr. Randall, as showing the necessity existing for an equitable tenant right in the absence of a lease; and to the Council of the Royal Agricultural Society, by offering a prize for an essay on farm customs recognizing the necessity for a better understanding between landlord and tenant. Perhaps

I may have disappointed some present by not recommending something more definite on the vexed question of game; but from the experience gained by our brethren in the north, you will, I think, see that those who are agreed on things generally have found greater differences arise in this matter than they were disposed to admit. Having referred fully to this question, and introduced instances of the disastrous effects arising from over-preservation, will, I have no doubt, tend to a discussion and expression of opinion, from which I trust more practical knowledge tending to the solution of the difficulties with which this question is beset, than anything I can adduce; and before I resume my seat, I would say that the landlord should feel that his property is in the custody of one who will not depreciate it, the tenant that his capital is invested in that which will be returned to him at the expiration of his term, and the labourer that he is under the joint guardianship of those men whose interest it is to make him feel that he is not forgotten in the arrangements that are made for the better fulfilment of the various obligations which are attendant upon any satisfactory solution of this great problem. In fact, it is a more equitable adjustment of the right of landlord and tenant that is required. The landlord should feel that his property will not depreciate, but may increase in value; the tenant that the capital expended is still his own as much as the owner who lays out money for improving his estate. And that the threefold cord that binds the interest of those directly engaged in the cultivation of the soil, the landlord, the tenant-farmer, and the labourer, may be strengthened and more firmly united by this and each future discussion of this important Club, is the earnest wish of your humble servant.

Mr. CADLE (Gloucester) said he was glad that they had had such an excellent paper. He was also pleased that Mr. Masfen had endorsed that evening many of the opinions expressed by himself in his essay for the Royal Agricultural Society. He took exception, indeed, to one point in his paper to-night, which appeared to him most important—that which had reference to superphosphate of lime. If a tenant is not allowed to sell off hay or straw without bringing an equivalent back to the farm, it was perfectly immaterial whether the manure was in the field or in the rick-yard. He saw no reason why the tenant should not be paid for more than last year's manures. If he used them for a crop of corn he would thereby increase it, and they all knew that the more the straw crop was increased the less likely the land was to be foul. As regarded leases he had seen so many disadvantages arising from them that he thought a system under which the tenant would be fairly compensated for improvement would be far better than a lease. Of course a twelvemonth's notice would not do away with the advantage of tenant-right. He certainly thought it was a great mistake to have an arrangement under which a man would first spend 10 or 15 years in getting a farm into a good state of cultivation, and then spend the next 5 or 6 years in undoing in this way all that had been previously done. Instead of a tenant recouping himself for what he had done, the landlord or incoming tenant ought to pay him for it, rather than allow the farm to be run out. In the case of a yearly tenancy the tenant should have an opportunity of getting back what he had invested, and how was that to be done without over-cropping or compensation? In this respect it was far better, he thought, for the outgoing tenant to be overpaid than not paid at all. Of course he would not put manure on the land when he knew he was going to leave unless he was to get something by it, and it should be made his interest to keep the land in good condition, so that his successor would share the benefit.

Mr. W. BROWN (Ting) said he had listened with much interest to the paper read by Mr. Masfen, and considered it, on the whole, a fair view of the question. At the same time, he must say that that gentleman had addressed himself far more to the question of the tenants' than to that of the landlords' interest. (A voice: "They are identical"). He (Mr. Brown) was not, he must observe, at the outset, a farmer, but a land-agent, and would remind them that there were bad tenants as well as bad landlords (Hear, hear). He had been several times in a court of law when evidence had been given with regard to questions of this kind, and when the judges and others concerned had said, in effect, to the landlords, "You had an opportunity when you were letting the farm of making any conditions you pleased, and if you did not take care of your-

self you must put up with the consequences." One great point connected with the discussion that evening was the want of capital. Some owners of large estates were in the habit of putting farms together, thus adding to the holding of those who, perhaps, had before great difficulty in carrying on what they already held in a proper manner. In that way hundreds of acres had in some cases been added to the occupations of farmers, not from their own free choice, but because that was the system adopted on certain estates in this kingdom, and it was one of the greatest hindrances to the advancement of agriculture that so many persons took land who had not the means of properly cultivating it (Hear, hear). With regard to farming agreements, Mr. Clinton, whose name would be received with respect in any public assembly as that of a man who was one of the greatest land agents in the kingdom (Hear, hear), had intimated to an institute of which he was a member that in his opinion the law of landlord and tenant must soon undergo alteration, and he suggested that, in the mean time, it was desirable that in every case there should be a contract which would prevent those disputes which arose out of what was called the custom of the country. He had himself seen illustrations of the necessity of a change in that respect. "The custom of the country" was the most indefinite description that could be conceived. Within a distance of 10 miles the customs differed so much that it was impossible to tell what they really were (Hear, hear). In a neighbourhood with which he was acquainted there was an agreement which had for the last 30 years been applied on an estate of four or five thousand acres, which after a mass of nonsense contained one clause to this effect, that the landlord agreed to allow the tenant at the end of the tenancy for all improvements of a permanent nature made on the farm, of which he had not reaped the full benefit (Hear, hear); such compensation to be settled in case of disagreement by arbitration (Hear, hear). He had never made an agreement since he first commenced business which did not provide for arbitration, the arrangement being that each party should appoint an arbitrator, that the arbitrators should appoint an umpire, and that in case these could not agree the arbitrator or umpire should be appointed by the under-sheriff of the county. As a land agent he might remark that on one occasion he was requested by a gentleman, a former member of this Club, to put a fair price upon a farm which had become vacant, and after having done so, he advertised the farm to let by tender, the result was a practical farmer in the district offered 8s. per acre more than his (Mr. Brown's) valuation (Hear, hear). It was the farmers as a body who raised the price of land, and not the land agents (Hear, hear). He could mention numerous instances in proof of that. He could not agree with the chairman that men ought to farm without restrictions. It was necessary to provide for the case of bad tenants as well as good ones (Hear, hear). He had never met with a case in which a landlord whose head was screwed on the right way found fault with a man for good farming. [Mr. T. CONGREVE: "The rent is raised"—Hear, hear.] It was only trumpery kind of people who did that. [Mr. MASFEN: "There are a good many of them"—Hear, hear.] Allusion had been made to payment for seeds. He had just had a case under his notice in Surrey, in which the tenant had to pay for seeds put down in grass land, the period extending back 20 years, no less than from 50s. to £3 an acre. As regarded the period for terminating tenancies, he thought Lady-day was far preferable to Michaelmas because it afforded less room for dispute. He had found the Lady-day arrangement a great convenience in Oxfordshire. At Lady-day when one man walked out and another walked in everything was easily settled by two men coming to the farm to value.

The CHAIRMAN observed that that was not the general custom in Oxfordshire.

Mr. BROWN continued: As regarded the drawing of leases; in many cases the reason why more practical clauses were not inserted, was that the matter was left to the family lawyer. An hon. baronet, whose predecessor was well known to everybody in England, having once consulted him about becoming his agent, told him that he was not to receive the rents, nor draw up agreements, as the lawyer would do this, neither did he wish him to interfere with the tenants, because they were a very respectable set of men, who always paid their rents regularly, adding that only one tenant, who was a book-farmer, had

ever given him any trouble (laughter). It appeared, in fact, that all Sir Robert wanted him for was to examine into demands for repairs, and hence he declined to act on his behalf. As regarded artificial manures, he contended that there were many which ought not to be paid for. Take, for example, the use of nitrate of soda. Of what benefit could that be to the incoming tenant. [A VOICE: "None."] As to cottage accommodation, he maintained that in the case of every farm the labourers ought to be enabled to reside within a convenient distance, and not compelled to walk two or three miles to their work, and that landlords should treat the question of cottages just as they dealt with that of farm-buildings. Labourers' cottages were strictly appendages to the farm. Game—one of the great questions of the day—had, as they must all feel, a very close connection with farm agreements. With regard to rabbits, he would say let them be annihilated, but as respected other kinds of game let farmers give all the encouragement they could to gentlemen who were fond of field sports (Hear, hear).

Mr. J. J. MECCHI (Tytree Hall, Essex) thought they were all quite agreed as to whose duty it was to effect certain improvements, as to what improvements should be made by the landlords, and what by the tenant. If a tenant had, as he had done, spent six or seven pounds an acre in draining perfectly heavy clay land, and five pounds an acre more in chalking it, and if he happened to die at the expiration of a short lease, by the custom in Essex not one shilling would be paid to his wife and family for the £12 thus expended. The custom of the county did not sanction that outlay, and hence nothing could be obtained. Drainage should be done by the landlord. Let him, if he liked, charge a per-centage upon it, but let not money expended by the tenant for such a purpose be taken from his capital. No one could doubt that the value of the land was greatly improved by drainage, and if, in order to secure good cultivation, the tenant was compelled to make the necessary outlay, he or his widow and children ought not to be deprived of the capital expended. Although he was called an apron-string farmer, he had farmed now for six-and-twenty years; and the drainage on his farm being as perfect now as when it was first made, no one could say that that was not a permanent improvement. He considered the discussion of such questions as that of great importance as respected agricultural progress. He believed that the great bulk of the landlords wished to do what was right, and he did not think that rents should always remain at the same amount. Considering the increase of population and of the general wealth of the country, it seemed to him only fair and equitable that if at the end of a twenty-one years' lease it turned out that the land had increased in value there should be a reasonable amount of increase of rent. The question of game was a very delicate one. He was a believer in the great value of winged game to farmers as destroyers of insects. He had generally three or four hundred fowls; they had access to every field on his farm, and within fifty feet of their home he had always the largest crop of corn (An exclamation: "The deuce you have!" followed by laughter). He was stating what he well knew to be a fact, and he still maintained that winged game were advantageous to crops (laughter). But when he came to rabbits and ground game that was another question. As an old sportsman he thought it was desirable to encourage landlords to reside on their estates, and not to tempt them to imitate the Irish absentees. Farmers ought to make everything agreeable to them, so far as they could do so consistently with justice and equity to themselves. But he wished to say that he had seen the worst farming round covers, and he thought that if there were one place where they ought to farm twice as well as they did anywhere else, if they wished to study their own interest, it was immediately round the covers (laughter). He was speaking cautiously and practically, having seen immediately round the covers some of the best crops on the farm (laughter). Again, if they wished to remain on good terms with their landlords, about £40 spent on wire netting might secure that object. The question of agreements between landlords and tenants was a very large question. Many of the agreements now in operation originated at a period when farming was in a totally different position from that which it occupied at present, and when it was not contemplated that farmers would buy large quantities of foreign cake and other articles for the purpose of making up the damage done by corn crops. He knew a farmer who expended £3,500 for

1,200 acres in that form. As to valuations for improvements, he felt that it must not be assumed that all farmers were honest. There were dishonest and unfair tenants as well as unreasonable and unjust landlords, and the grand point was to aim at securing a system which would ensure an equitable settlement of the claims of both classes (Hear, hear).

Mr. H. TRETHEWY (Silsoe, Ampthill) said: He would begin by endeavouring to answer the question put by Mr. Mechi. What improvements a landlord and what improvements a tenant should make? In his opinion that question was very easily answered. He thought that all such permanent improvements as Mr. Mechi alluded to, draining, building, and so on, should be made by the landlord, a fair per-centage being charged on the outlay, according to agreement. Everything of that kind resolved itself into a question of rent. If a farm were very low-rented, it would bear a per-centage upon improvements; and on the other hand, if it were very highly-rented, the same amount of burden could not be equitably imposed. For his own part he must say—and he had considerable experience in this matter for many years past, and had given evidence before a committee of the House of Commons, consistently with principles which he had acted upon ever since—he thought it was fair to charge under ordinary circumstances five per cent. for an outlay of that kind, and he thought such an arrangement was mutually advantageous to landlord and tenant. Chalking and liming were operations which should, in his opinion, be done by the tenant for obvious reasons. In the first place, the tenant probably found the chalk on the land; he had his own carts to cart it home with, and it would be as absurd for him to call upon the landlord to come and chalk the land for him, as it would to ask him to plough it. He thought the tenant should be compensated for marling or chalking; but he would not have the thing done by valuation. Many gentlemen might differ from him on that point, but he entertained a strong opinion, and had reasons for it. Before chalking or liming, or any operation of that kind was commenced, he would have an agreement with the tenant; he would say to him, "In the event of a change of occupation you shall be paid so much for your outlay in proportion to the advantage derived from it." That could be endorsed in an agreement, and in the event of death there was no difficulty in settling the matter. Such an arrangement did away with a great deal of unpleasantness and uncertainty, and at all events people knew what they were dealing with. Some people thought that a tenant should be paid for everything which he considered an improvement. What a tenant considered to be an improvement, a landlord might consider the reverse, and he (Mr. Trethewy) held that a landlord should not be called upon to pay for anything, unless he has been consulted. A tenant might take it into his head to set up a fence, or even a building, which in the landlord's opinion would be far from improving the farm. He thought that each party should be consulted in such matters, and that the landlord should not be required to pay for every improvement which the tenant might feel inclined to make. A great deal has been said lately about leases. Many persons thought leases were a panacea for all the evils complained of; they said "Give a tenant a lease, and then he is sure to farm well." His opinion was, that tenant-farming was better under a yearly agreement, with a compensation clause than under a lease without compensation (Hear, hear). With a seven or fourteen-years' lease there was almost always an increase of rent at the end of the period. Leases were the rule in Scotland, and what was the consequence? There was no other land in the kingdom which was rented so high.

Mr. T. CONGREVE: The leases are for 31 years (Hear, hear). Mr. TRETHEWY: He was well acquainted with several large estates in different counties, and he had found everywhere that where leases did not prevail, many occupations remained in the same family for generations, and that where leases prevailed there were frequent changes (Hear, hear). Another vexed question had been raised, through which he did not see his way. I sounded very feasible to say, as Mr. Mechi did, that all the hay and straw should be consumed on the farm, and that a certain proportion should be brought back; but he wanted to know how anyone could tell how many tons of cake or guano had gone off the farm, and how many should be brought there. His opinion was that the best farmers were those who consume their own hay and straw, and instead of selling bought. He said that unhesitatingly and fearlessly. Mr. Masfen whispered

and he thanked him for the hint, that that question depended a good deal on the situation of the farm. If a farm were near a town or a railway station, the occupier might be able to sell his hay or straw, and get back what he wanted for cultivation; but the case was totally different when four or five miles intervened—then the carting would beat them. As regarded game, he might remark that no man in that room perhaps had set himself more against ground game than he had done. He thought the tenant should be allowed to destroy the rabbits; but where the landlord lived on his estate, and reserved the right of shooting, and the farm was taken on that condition, the tenant could not blame his landlord for exercising his right. If a landlord had let his land on the understanding that the ground game should be reduced, then it was a most unjust thing for him to allow the estate to be over-run by it, and he thought that rabbits should under all circumstances be killed down. Mr. Mechi seemed to think it impossible for tenants to kill rabbits, because they got into the covers. In such cases landlords might employ a warrener to kill them.

Mr. T. CONGREVE: They never do it.

Mr. TRETHEWY begged Mr. Congreve's pardon for differing from him—some landlords had done it, and he (Mr. Trethewy) appealed to a gentleman sitting opposite to him whether he had not begged him to let him have one of his men to destroy rabbits in different counties where he had agencies.

Mr. EDMUNDS (Bugsby) said he could not help asking where they were—in other words, what was their position as farmers in relation to that question. What tended more than anything else to hinder the development of agriculture was, he believed, uncertainty of tenure, under which a man could not tell whether or not he would ever get back what he invested in the soil. In every farming agreement which he had seen yet, there was too much left to good feeling. In commerce nothing was left to good feeling—a man would not trust his own brother, but would have everything in black and white. As regarded agriculture, however, Mr. Jasper More and other gentlemen said, as he had observed lately, that no landlord would do this thing or the other, because good feeling would not let him. If good feeling existed everywhere, the tenant might be safe; but unfortunately it did not (Hear, hear). Where a landlord employed an agent, who was a good practical man of business, the tenants might practically be in a secure position; but there were cases in which noblemen left everything to a lawyer in London, who knew nothing about the tenants or their wants, and then there could be no security or improvement, because red tape ruled everything. As regarded forms of agreements, he should be glad to see something emanating from an authoritative body. There were the Royal Agricultural Society, the Chambers of Agriculture, and the Farmers' Club, either of which might deal with that question. He had more hope of the Farmers' Club in that respect than of either of the other societies. That Club consisted chiefly of men who were practical farmers and men of business; he did not know of what the other societies consisted, though he saw a great many big names connected with them. He thought that Club might draw up a form of agreement which would show what ought to be done. As to laying out seven or eight pounds an acre for chalking, as Mr. Mechi appeared to have done, without any security for compensation, if a man did that, he committed an act of folly, and deserved to lose his money (laughter). As to the poultry about which Mr. Mechi talked so much, he might remark that he kept a good deal of poultry on his farm, and he was sure that if they could have their own way they would eat all he grew (laughter). The land immediately round the covers ought in his opinion never to be let at all (Hear, hear); it belonged properly to the landlord, who kept the game to consume the crops.

Mr. L. A. COUSMAKER (Westwood, Guildford) said, being his own landlord and tenant he considered himself perfectly unprejudiced on that question, and having farmed for seven-and-thirty years, and kept his eyes open on all around him, he was not without experience. In the case of agreements generally there were only two parties; but in the present instance there were virtually three, and they had to consider not only what was best for landlord and tenant, but also what was best for the public at large. If a farm were let on certain conditions, which were strictly adhered to, neither of the immediate parties to the agreement could complain; but, then,

the third party to which he alluded might step in and inquire by what kind of agreement it would be likely to benefit most. Hence the question under discussion was, What was that form of agreement between two parties—landlord and tenant—from which a third party—the public—would derive the greatest advantage? He was against long leases, he thought they could not be advantageous to either party. A landlord who had granted a lease might soon find that he had for his tenant a man who was very different from what he had expected or hoped to find him. He might find a very bad farmer instead of a good one, or that he had got a good farmer but a very unpleasant fellow, and in neither case was he likely to feel satisfied. Such a state of things could not encourage landlords to do what was so desirable—reside on their estates. Even if the tenant were a desirable one, he might, of course, die, and the widow find herself saddled with a long lease. He thought that tenancy at will was the best mode of occupation, tending, as it did, to promote a good understanding between landlord and tenant. A good landlord would never refuse to good tenant any proper permanent improvements on his estate. Having satisfied himself that the things asked for would be improvements, it would be his duty to do one of two things—either to execute the improvements himself, charging the tenant a fair rate of interest for the outlay, or else to allow the tenant to execute them upon the security of a written agreement, that whenever he quitted the farm, whatever might be his interest in what had been done, he should receive compensation for it. No tenant occupying a farm on such conditions would be much aggrieved, and he believed that under such a state of things agriculture would advance much more than it would under a system of leases (Hear, hear).

Mr. C. S. READ, M.P., thought no one could doubt that whoever made improvements should be paid for them. As to the landlord, of course he would take care of himself; unless, indeed, he happened to be in the position shadowed forth by Mr. Trethewy, of having let his land at so high a rent that he could not possibly make any additional charge. As regarded the tenant, he did not agree with Mr. Trethewy that it should be necessary for him to go to his landlord and consult him about every improvement in the cultivation and management of the farm (Hear, hear). If a good system of Tenant-Right, similar to that in Lincolnshire, were established throughout the length and breadth of the land, there would be no necessity for the tenant to go to his landlord and say, "I want you to drain this field, and to chalk that one;" every man would then farm the land in the best possible manner, feeling satisfied that he or his representatives would some time or other reap the benefit (Hear, hear). No one could be more in favour of long leases than he was, having observed how much good they had done in his own county; and he felt convinced that if tenants received reasonable compensation for improvements, either through leases or a system of tenant-right, the agriculture of England would be rapidly advanced by that means (cheers). There were many things in Mr. Cadie's model agreement of which he entirely approved; but there were one or two which he could not endorse. In the first place, he objected very strongly to a six-months' notice to quit (Hear, hear). He objected to that short notice more every day he lived, not because he wished to give the tenant a greater chance of running out the land; but to give him a longer chance of finding some other occupation (Hear). Again, any agreement enforcing a Lady-day entry on arable land would be altogether wrong (Hear, hear); and any clause which reserved rabbits to the landlord would certainly be a great mistake (Hear, hear). If he were rightly informed, many farms in Scotland were at the end of the lease let by public tender, the outgoing tenant having no prior claim, whereas he thought the right way was to have an understanding at least two years before the lease expired as to a renewal of the term. He agreed with Mr. Trethewy that in parts of Scotland more changes of tenants took place where leases prevailed than in many districts of England where land was held at yearly tenancies. Considering the immense amount of capital embarked by the tenant farmer in the cultivation of the soil, and believing that in a few exceptional cases landlords took advantage of that want of security. He thought the time had arrived when a liberal and comprehensive system of Tenant-right should be extended over the whole country (cheers).

The Rev. E. SMYTHIES (Hathern Rectory, Loughborough) considered that this question was, after all, one simply of de-

mand and supply. A great deal of disputing and dissension arose from the fact that the demand for land greatly exceeded the supply, and those who were subject to the effects of excessive competition naturally disliked it. On a large estate with which he was acquainted the farms were very moderately rented, but they were very badly managed, and when his friends talked to the owner about making improvements, he replied that he did not know why he should trouble himself about them, seeing that if a farm happened to become vacant at 10 o'clock at night he had a dozen applications for it the next morning (Hear, hear). The truth was that a great many men who had piled up money in towns seemed anxious to lose it in the country, and that greatly increased the competition for farms, and the rents paid for them. Indeed, such persons as he alluded to hardly seemed to mind what rent they paid, while practical farmers had learnt by experience the necessity of caution. This question suffered through being overshadowed by a cloud of vague generalities. They constantly heard such phrases as "unexhausted improvements," "custom of the country," "duties of landlords," and so on. What did they mean? Let some one try to represent them by figures. No arrangement could be applicable in every county. Moreover the owners of the soil were many of them sadly ignorant as to what concerned their own interest. It was matter of fact that noble lords and hon. baronets who owned a large proportion of the soil of this country knew nothing about it; many of them actually prided themselves on their ignorance, and when questions arose they referred them to the family solicitor, who also knew nothing about the matter. Being himself once concerned in the letting of about 1,200 acres, he gave instructions that there should be no restrictions as to cropping, but the lease being drawn by the family solicitor he was obliged to yield to a certain extent to his representations that the usual covenant as to cropping should be inserted. The solicitor also objected to a stipulation which he desired giving to the tenant an absolute right as regarded sporting, but on that point he (Mr. Smythies) remained firm. What, however, was the result? Within one week after the agreement was signed the tenant advertised the game, and he let the whole to a London man at a shilling per acre; and it turned out that the lawyer was right and he was wrong. So that there was something to be said on the landlord's side as well as the tenant's as regarded game (Hear, hear). What Mr. Masfen said about education reminded him that it would be a great mistake to suppose that the farmers who met there and took part in the discussions constituted a fair representation of the farmers of this country. It was no flattery to say that they were, in fact, *la crème de la crème* (laughter); and he might add that they might find in almost any district a number of men who had never been near the Farmers' Club, and whose notions were very different from those entertained by the men whose position was sketched by Mr. Masfen (Hear, hear). There was an immense number of cultivators of land whose object seemed to be to get as much land as possible, no matter how small their capital, and who endeavoured, as it were, to save their rent rather than to make it (Hear, hear). Such persons were very apt to get into the *Gazette*, and to leave their farms in a far inferior state to that in which they found them. The better class of tenants ought to be allowed to use a farm as the miller used his mill, that is to make as much as they could by keeping it well oiled and in good working condition. In these days men could get artificial manures at a much cheaper rate than they could make manures on their own farm. He could not recall any period last year when straw was worth less than three guineas a ton. He himself sold some at four guineas, and would any practical man tell him that there was some process of making manure by which he could make straw manure worth that amount? (Hear, hear). He thought that men should be allowed to take advantage of an exceptional state of the markets. If landlords wanted to secure the right kind of men as tenants they must insist on there being sufficient capital. A good deal had been said that evening about the comparative merits of leases and tenancies year by year. Much had been and might be urged in favour of both. When there was the right sort of man let him have a lease. He might here remark that he had been told by a member of that Club of a case in which the same family had occupied under the same family ever since the Conquest. That spoke well for both.

A MEMBER: Was that under leases or an agreement?

The Rev. E. SMYTHIES replied that it was an annual tenancy. He would add, with regard to cottages, that landlords as well as tenants might be short of capital, and it was not an easy matter for an owner whose estate was deeply encumbered to provide all that was needed in regard to labourers' dwellings. He might fairly reply to appeals that he could not afford the requisite outlay.

Mr. G. H. HUSARY (Green Farm, High Wycombe) said that in from twelve to twenty cases in which farms had passed through his hands as an agent, the tenant having been offered the option of a lease terminable in seven or fourteen years or a two years' running agreement, had preferred the latter (Hear, hear). He thought that on no account should there be less than eighteen months' notice either from the landlord or the tenant. In speaking of improvements, several gentlemen had spoken of the landlords as if they all came under one category: it did not seem to have occurred to them that there was trust-property, and cases where the "landlord" had not the power to expend money on improvements. Where a landlord had the power he thought the fair plan was for the landlord and tenant to agree on the per-centage that should be repaid by the tenant for such permanent improvements, leaving the detail for subsequent arrangement, or that the landlord should supply the pipes (in the case of draining) and the tenant put them in at his own expense. In his opinion tenants should be allowed to sell wheat-straw, trefoil, sanfoin, and clover hay on bringing back manure equivalent to the manure which the hay and straw would have produced if consumed upon the farm. He did not see how without such an arrangement the London and other large markets could be supplied.

Mr. G. JACKSON (Tattenhall Hall, Chester) said it was nearly fourteen years since, as a member of that Club, he introduced the question, What form of agreement was best calculated to give a stimulus to agricultural improvement? They had been asked that evening where they were in relation to that question? In that respect he was exceedingly gratified with the discussion, showing as it did that they were far ahead of the position they were in when he read his paper in February, 1858 (Hear). At that period the subject was looked upon in the Club with great suspicion, and he met with little sympathy; but the case had been very different that evening. In Cheshire, it being felt that little could be done to improve agreements without the consent and approbation of landlords and agents, a committee was appointed, consisting of landlords, agents, and tenant-farmers, to consider the question. Three committee-meetings were held, each lasting about six hours. It was found that landlords were far more desirous of encouraging tenants in the path of improvement than had been anticipated; and the result was the framing of an agreement for Cheshire, which could hardly be improved upon (Hear, hear). If the farmers of each county in England would take that hint, and endeavour to collect together the landlords, agents, and tenant-farmers in their several localities, that would, he believed, tend greatly to establish tenant-right; and without tenant-right there could, as they all knew, be no farm-right. It was no use for one county to think of framing a form of agreement for another, for each locality required a separate kind of management; but he felt quite certain that, if what he had mentioned were carried out generally, they would soon have throughout England that kind of tenant-right which they were all so anxious to see.

The CHAIRMAN said before closing that discussion he felt it incumbent upon him to thank Mr. Masfen for his practical, and at the same time temperate, paper, containing as it did a vast amount of information well worthy the consideration and the serious attention of the members of the Club (cheers). He thought Mr. Cadle's opinion, that the condition of a farm should not be allowed to run out during the last years of a lease, was a correct one. Probably a notice for two years, with compensation for unexhausted manures used and improvements made during those two years, would answer the purpose of a lease. Mr. Brown's idea as to cottages on a farm also seemed to him correct. In speaking, as he did in his opening remarks, of no restrictions as to the course of cropping and the free use of the raw material, the land, he wished to be understood as having spoken of the modern and advanced and not of the slovenly farmer (Hear, hear). A good farmer farmed by growing restorative in rotation with exhaustive crops, and were he to do otherwise he would be cutting his own throat. Mr. Edmunds said, and said rightly, that too

much reliance was placed upon the good feelings existing between landlord and tenant. To his mind something more definite ought to exist through an equitable agreement being drawn-up as between the parties. Mr. Jackson's idea of forming a committee of landlords, agents, and tenants to discuss the question of an equitable agreement was a very sound one, and worth attention. The resources of the soil

could not be fully developed without either security of tenure or compensation for unexhausted improvements. The entire community were deeply interested in the proper solution of that problem.

Mr. MASFEN briefly replied, and this terminated the proceedings.

THE ANNUAL DINNER.

The took place on the Tuesday evening at the Salisbury Hotel, and was attended by nearly a hundred members and visitors. The chair was taken by Mr. R. J. Newton, president for the year, and the vice-chair, in the absence of Mr. James Howard, M.P., president elect for 1870 (in consequence of indisposition), was filled by the hon. member's brother, Mr. Charles Howard.

After an excellent dinner, grace was said by the Rev. Rowland Smith.

The CHAIRMAN gave the usual loyal and national toasts, Mr. J. DUMRELL responding for the Army, Navy, Militia, and Volunteers.

The CHAIRMAN rose and said that the next duty which devolved upon him was to propose what he presumed would be accepted as "the toast of the evening," namely, "Success to the Farmers' Club" (loud cheers). Happily this would not entail upon him much difficulty, as it would be seen by the Report submitted by the Committee to the Annual Meeting of Members, held that day, that the Club was in a very satisfactory position (cheers). Its receipts had never been higher in any previous year than the past, whilst the outgoings were considerably within the income. Many new members had been elected in the course of the year, and, fancifully speaking, the institution was altogether in a flourishing condition (cheers). The discussions which had taken place during the twelve months were of a useful character, and the subjects to which they related of great importance. The first was on the question of pauperism and vagrancy, which was commanding a large amount of attention out of doors at the present time; for, unhappily, both pauperism and vagrancy were largely on the increase in the country. The adulteration of cattle food and manures was the next subject, and more particularly concerned the members of the club, who belonged to the class that constituted the chief consumers of these articles. In the course of the discussion Dr. Voelcker explained which were the best sources whence to get them, and observed that the best and purest manures and foods were after all the cheapest: a remark which every practical man could appreciate and understand (Hear, hear). Passing on he came to a subject also of very great importance, though the discussion upon it took a different form from what many members anticipated it would take. It was introduced to the notice of the Club by Captain Dashwood, and it related to the different systems of rating as between England and Scotland. It appeared that the system in Scotland was based on the principle that one-half should be paid by the landlord, and one-half by the tenant, and this system had no doubt one good effect—that it increased the number of contributors to the rate and interested more persons in its proper expenditure (Hear, hear). The next subject to which their attention was directed was what he might term the Rabbit abuse (loud cries of "Hear"), the existence of which was the cause of much injury in many districts (Hear, hear). Foxes versus Rabbits was the title of the paper read; and he must say that, in the discussion which ensued, foxes had decidedly the best treatment of the two (Hear, hear, and laughter). They were good things in their way, by affording sport to the gentry and farmers; but as to rabbits, why they were an unmitigated evil (cheers). True, a reverend speaker complained that fox-hunting was carried to an excess, but at the same time it must be remembered that he had the candour to confess that having three boys growing up towards manhood he sent them fox-hunting whenever he could (loud cheers and laughter). The next subject on the card had been discussed so recently that it must be fresh in the minds of all present. It was raised on an interesting paper read by Mr. James Howard, the Member for Bedford, on

Continental Farming; but the only remark he would make on the subject was that Mr. Howard showed conclusively that the peasantry on the continent had to work harder and for less wages than our own labourers, and this was so far satisfactory, that it showed the English farmer did not object to pay his men a fair scale of wages. Mr. Howard pointed out, and Dr. Voelcker confirmed him, that there was a wide field open to the agriculture of this country for the growth of beet for the manufacture of sugar, and Dr. Voelcker also hinted that, although it was generally thought that the climate of England was unsuitable to the growth of beet for that purpose, this was altogether a mistake, and that as good beet-root could be grown here as elsewhere to make sugar (Hear, hear). With respect to the previous night's discussion on "the common form of farm agreement as tending to the fullest development of agriculture," he only hoped that some satisfactory result would follow from it; for on all hands it was admitted that something was wanted in the nature of a common form of agreement between landlord and tenant, and whatever that "something" might be, it was certainly for the interest alike of landlords, tenants, and labourers that the question should no longer remain unsettled. It was not in his power to point out what were the best means of doing this, but he was much struck by the statement of a Cheshire gentleman who spoke in the discussion and said that a committee had been formed in that county composed of landed proprietors, agents, and farmers, and that they had succeeded in settling an agreement so far as their county was concerned (Hear, hear). Whether a similar procedure in other counties might not be adopted with an equally good result was, he thought, well worthy of consideration (Hear, hear). Great success had attended the operations of the Club; moreover, through its discussions, helping to diffuse a general knowledge amongst the agricultural community by the agency of the Journal of the Club, and especially of the agricultural press, *Bell's Weekly Messenger* and the *Mark Lane Express*, papers which were also the means of spreading throughout the country a vast amount of useful agricultural information (loud cheers). That was not the only mode, however, in which the Club had exercised a beneficial influence; for it could not be doubted by members who had attended the meetings of the Club for a succession of years, as very many of them had done and he hoped would continue to do for years to come, that much practical information was interchanged in social chat both in the smoking-room and in the club-room, and he would venture to add that no man of ordinary intelligence could meet the members of the Club on any occasion without gaining information (Hear, hear). He thought he had now said enough to show that the success of the Farmers' Club of England was an accomplished fact (Hear, hear). That success was generally acknowledged, and the influence of the institution was gradually making itself felt in every way. Indeed he should not be saying too much if he added that opinions emanating from the Club were received by the press with greatly increased favour as compared with a few years ago. Why, that great organ for the diffusion of knowledge, the *Times*, recognized the utility and value of many of their discussions—an unmistakable sign of the success which had attended their efforts (Hear, hear). In the course of the past year members of the Club had gone as deputations to the Privy Council to express their views and opinions upon matters which deeply affected the agricultural interest, and he was happy to be able to say that those deputations had been received with courtesy and their opinions treated with marked respect by Mr. Forster, the vice-president of the Committee of Council. Further, the opinions of members of the Club had been asked on several occasions by per-

sons in high authority—which was an additional proof of the high position the Club occupied, and justified him in the assertion that as an institution it never stood in a better position than at the present moment (Hear, hear). In conclusion, he called upon the company to drink in a bumper “Success to the Farmers’ Club.”

The toast was drunk with immense applause.

Mr. A. PELL, M.P., in proposing the health of Mr. Newton—the chairman, said he had attended most, if not all, the meetings of the club held in that room during the year just closing; he felt entitled therefore to speak with some confidence respecting the manner in which Mr. Newton had performed the duties of his office; and he was prepared to say that a more business-like, intelligent, winning, and, he might add, commanding chairman in keeping an audience in order and promoting the transaction of business it had never been his good fortune to meet (cheers). And how was it they had come to find those qualities in their chairman? It was simply because he was no mere theorist, but had devoted the best years of his life to the business with which the name of the club was associated, that he was able in his riper days to preside over their deliberations and show how ably and well a practical man could conduct a business into which theory also entered largely (cheers). For many years, and he hoped for many yet to come, practice in this country had not had to retire into a place secondary to that of theory. We had seen enough of that in its most hideous colours in a country over the water, and he thought we might see there too that it was not unlikely to bring these simple pursuits to grief, if not to destruction. In England, at all events, we gave respect and a hearing to men who, like the chairman, had proved by the manner in which they have conducted their business that they were entitled to a hearing and respect, and that their opinion was of value (Hear, hear). It had not been his privilege to know Mr. Newton beyond the circle of his official sphere, but all that he had ever heard of his hon. friend confirmed his own impression that he was a right-down good, practical farmer; and, if he were that, then he must be to all of them a teacher and a benefactor (Hear, hear). He had been very much amused that morning on his visit to the Smithfield Club Show by going into one of the side rooms which branched off from the ground floor, where he found himself in a place which appeared to him to be devoted, if he might say so, to “the period in which we live” (a laugh). In that room, having previously secured his watch and deposited what little bit of chain he had in his waistcoat pocket (continued laughter), for there was a great crowd assembled, he found himself all at once brought up before a creation which called itself the “Little Wanzer,” and which he discovered was a sewing-machine. A little lower down he came to the “Gold of the Period,” but what that was he did not know. Passing on, he next came to the “Pump of the Period,” and he need scarcely say that in every direction the “Girl of the Period” was to be seen pressing upon the visitors rather severely (loud laughter). But it struck him as he looked around that what was still wanting there was a “Chairman of the Period” such as this club had the honour of possessing in the gentleman at the head of the table, whose health he begged to propose, not only as chairman of the Central Farmers’ Club, but as a model chairman of the period (loud cheers).

The CHAIRMAN briefly returned thanks, and in doing so expressed his acknowledgments for the ready and useful assistance he had received during his presidential year, from the Committee and the secretary, Mr. Corbet; while, in resigning the chair of the Club, he hoped he should do so with the conviction in all their minds that the honour of the post had not suffered at his hands (cheers).

Mr. T. HORLEY, jun., proposed as the next toast, “The Royal Agricultural Society of England, the Highland Society of Scotland, and the Royal Agricultural Society of Ireland.” There might possibly be a difference of opinion as to whether these societies had achieved the greatest possible amount of good in their power, and particularly he referred to the Royal Agricultural Society of England; but when they called to mind the first county show of that society at Oxford, in 1839, and looked back a few months to the last meeting at Manchester, the magnitude of the Show on that occasion, and the interest which it excited among all classes of the community, it was obvious that a great deal must have been done by the Society’s agency (Hear, hear). Then, taking a glance forward at the meeting

to be held at Oxford in 1870, and comparing what it would probably be with that which was held in the same place thirty-one years ago, he was sure all would admit that a vast stride had been made in the interest of agriculture by the institution to which he alluded. At the time of the first show at Oxford, all the people who could be collected were contained in the quadrangle of one of the colleges; and the question which he now put to himself was, what they would do with the multitudes that were likely to gather in Oxford at the Society’s Show in July 1870 (Hear, hear). On the whole he came to the conclusion that, although the Society might not have done all that was expected from it, nevertheless a great deal had been done. With regard to the Highland Society of Scotland, he gathered from its reports that it had made considerable progress, and been of great service to the agricultural interests in that part of the kingdom, and he felt sure that our Scottish brethren would always continue to be “up to the mark.” As to the Royal Agricultural Society of Ireland, he knew a little about that himself, and was aware that it had been very successful in promoting the advancement of agricultural improvement. One of the finest collections of roots that he ever saw was sent over to the English Society’s exhibition by the Irish Society. Subsequently it had been his lot to visit the shows of that society several times, and he ventured to say that the Roscommon sheep were very fine flesh and wool bearers. Expressing a hope that brighter times were in reserve for the sister country, Mr. Horley concluded by giving success to the three great associations of the United Kingdom, with which he joined the name of Mr. John Thompson (loud cheers).

Mr. THOMPSON responded, and said that he had had some little connection with the Highland Society of Scotland in his younger days; but as nearly a quarter of a century had passed since he crossed the Tweed, and settled in England, he regretted to say that he had not been able to keep up that connection as he should wish to have done. As a humble member of the Royal Agricultural Society of England he had great pleasure in acknowledging the toast, and he believed he might safely say, though it was hardly necessary to do so after what had fallen from Mr. Horley, that the history of that society from first to last was one of continued progress. Moreover, he also thought, notwithstanding all that had been said about exclusive management, favouritism, and so forth, that there was no body of men more anxious to do their duty, and conduct the business of a society in accordance with the requirements of the present age, than the existing Council of the Royal Agricultural Society. For his part, however, he should like to see a closer connection established between the Royal Agricultural Society and the local associations of the country (Hear, hear). He felt that it would be infinitely for the advantage of agriculture generally, if such a connection were effected, so that the local societies might form as it were the branches, and the central society the trunk of the great agricultural tree; and the circulation of knowledge, based upon the principles of practice with science, kept going throughout all parts of the country, for he could not see how the benefits they were all anxious to disseminate could reach the smaller tenantry and labourers without the agency of the local societies (cheers). He knew there were difficulties in the way of forming a union of the sort; but once that it was properly established and cemented, he was satisfied that it would be productive of great and wide-spread advantages (cheers).

Mr. GARNETT, in responding for “The Royal Agricultural Society of Ireland,” said he felt it a great privilege and pleasure to be associated that evening with the farmers of England, which was owing to the fact that his friends Mr. Read and Mr. Pell had visited his poor country, which was now in such an anomalous position, in order to judge for themselves as to what were its real resources. It had, in fact, enough agricultural resources to be a worthy rival of England. The Times had sent through the country a gentleman whom it called its private correspondent, the object being, he supposed, to obtain information for the guidance of Parliament in the coming session. Whom had it selected for that purpose? He had no wish to say anything offensive; but this correspondent was, he believed, a briefcase barrister, and a man who was as incapable of telling the public what was the nature of the soil, or for what kind of cultivation it was best adapted, as the smallest child in the city of London (laughter). This gentleman went from town to town and from village to village, picking up information

here and there for those who, he regretted to say, had never proved themselves the real friends of Ireland (Hear, hear). How differently did his friends Mr. Read and Mr. Pell act! They went to those parts of Ireland which formed the nursery for young stock—he regretted that they did not become better acquainted with the localities where it was brought to maturity; and, although they visited some of what might be called the worst parts of the country, if the *Times* correspondent was to be regarded as an authority, yet he ventured to say they met with no insult (cheers). It was the object of a certain party, for some political purpose, to keep Englishmen out of Ireland; but agriculturists were glad to see them whenever they came. The next meeting of the Royal Agricultural Society of Ireland was to be held in the far-famed town of Ballinaloe, which stood almost unrivalled as regarded the show of both sheep and cattle. He might here observe that his friend Mr. Read was so enamoured of the Roscommon heifers that he invested in them very largely; he bought no less than seven of them, and they were such animals that when his friends in Norfolk saw them they could hardly believe that they came from poor Ireland, fancying that they must have come from the Yorkshire volds, or some locality in which the huge Shorthorns were produced. Ireland produced as good cattle as good sheep, and as good roots as any other part of the kingdom; and, notwithstanding the Fenian disturbances, he believed the population generally would prove well-disposed if it were only properly treated and governed (cheers). The Irish agriculturists wanted to see English farmers among them (cheers). They did not care about seeing lawyers, who were interested in the continuance of dissension and discussion, which helped to make breach and bring business (laughter). He thought that the people of England should insist that if a Land Bill were passed for Ireland in the next session there should also be one for England. The countries forming the United Kingdom should not be dealt with as if they were separate; there should be one kind of legislation for all. They were all under the same authority; there was the same Government; the same Queen—God bless her! and he trusted that her Majesty would never forget what placed her on the throne, and would not consent to the Constitution being frittered away. In his opinion a crisis had come when they must all stand together as one man, for if Ireland went, England must go too (Hear, hear). There was a democratic spirit abroad, which must be resisted; but if all true patriots were firmly united, they would, through God's help, be enabled to maintain the empire in the position in which their forefathers placed it (cheers).

Mr. C. SWELL READ, M.P., on rising to propose "The Vice-Chairman of the Club," Mr. James Howard, M.P., said, At this our annual dinner almost everybody seems disposed to take a sort of retrospect of the closing year; and, as you have given me such a kind reception, you will, perhaps, before I proceed to the toast, allow me to take a little retrospect of Parliamentary matters in connection with agriculture (cheers). You may naturally ask what the agricultural members did for the farmers in the last session. Well, if you judge us by results, I fear I must reply "Precious little" (laughter); but if you will judge us by our earnest and hearty desire, I hope we shall have a favourable verdict at your hands. Never was it more true than it is at present that the minority is always in the right (laughter). We agricultural members happen to be a minority in the House, and we cannot be responsible for the doings of a tyrant majority. In the last session of Parliament I took upon myself on two occasions the great responsibility of dividing the House. The first question on which I divided was comparatively a very small and insignificant one; but as I believe I was right, I hope my conduct met with your approval. I wished, and I believe you wished too, that all servant boys under sixteen years of age should be exempt from taxation in that capacity. I do not know, indeed, that it might not be a very good thing for masters if the employment of such persons were taxed very highly, for there is not a more disagreeable set of persons to be found than stable-boys; but, on the other hand, considering how long it takes to teach such lads to perform their duties properly, it seems rather hard that masters should have to pay a tax of 15s. for the trouble they have with them (laughter). On another and more important occasion I divided the House on the question of the establishment of a separate market for the sale and slaughter of foreign stock; and, although we agricultural members were not successful in that division, sub-

sequent events have tended to prove, not only to the farming interest but to the nation at large, that we were in the right and the Government in the wrong (cheers). One word as to the future. In the first speech which I made in the House of Commons I said, in reply to a taunt which was thrown out against the agriculturists, that the farmers would never be the persons to call for protection again (Hear, hear). I then ventured to say that the skilled artisans and the manufacturers would ask for the restoration of protection long before we should think of doing so (cheers). Free trade is a very good game as long as it "beggars your neighbour;" but when it beggars yourself it is not so pleasant (Hear, hear, and laughter). As long as those who were engaged in the manufactures of this country begged the farmers they thought free trade uncommon nice (laughter); but now that it has had the effect of considerably reducing the wages of the artisans, such persons naturally think it is not quite so pleasant as it was at one time. I hope and trust that we farmers shall never be humbugged by protection any more (cheers). Let us go in for thorough and complete free trade—free trade seen not only in the abolition of import duties but in the right to buy and sell, convert, and manufacture all our produce in the manner which we consider best for our own interests (loud cheers). And now, gentlemen, for the toast which I have undertaken to propose, which is our future President, Mr. James Howard (cheers). I regard that gentleman not merely as a double-barrelled gun but as a regular revolver (laughter). In Parliament he is, in my opinion, a great weight and an immense benefit to agriculturists. One evening, after I had made a speech in the House, and Mr. Howard, besides endorsing all I had said, had added some useful, valuable, and pertinent statistics, a member from the other side came over to me and said, "You are, of course, a very respectable person, we, on the other side, like to hear you speak, and we give you great credit for sincerity; though all you fellows connected with the land have such narrow-minded notions. But," he went on to say, "there is that Mr. Howard, who sits on our side, let him say what he will, with his liberal politics, and that enlightenment which commercial enterprise gives a man, we seem to fancy that what he says must be true" (laughter). It is, gentlemen, on questions connected with the land that Mr. Howard will help us in the House of Commons. If in the next session a philosopher gets up to talk about peasant-proprietors, one of Mr. Howard's barrels will, I believe, go off and double that man up (laughter). Let politicians talk wildly on any subject connected with agriculture, and Mr. Howard will bring forth his practical experience to refute him. One evening last session, when there was a debate on the Patent Laws, and that great man Sir Roundell Palmer and that other great man Lord Stanley had denounced the Patent Laws, up got Mr. Howard and abolished the legal arguments of the one and the philosophical arguments of the other in the most charming and beautiful way (cheers). A gentleman who was sitting behind me said, "Well, that Liberal man on the other side of the House seems to me to knock those great dons over just as if they were ninepins, and this he does while he is beaming with good-nature and his face is as radiant as that of a cherub" (laughter). Mr. Howard's calm and collected manner, his thorough independence, and his practical knowledge of farming matters, combined as it is with a large degree of commercial intelligence, cannot but prove of the greatest service in Parliament to the agricultural interest; and I believe that at such a crisis as this you could not possibly have selected a more worthy or valuable person to be the president of your club (cheers). There are men who are so good that they will probably work themselves up; certainly they will never rust up; and I think perhaps our good friend Mr. James Howard, who is supposed to have been taking his holiday quietly and calmly, has in fact been doing rather more work than he should have done. It grieves me, and I am sure it will grieve all of you, to know that at the present time Mr. Howard's health is such that it would not allow him to be with us this evening; but let us drink with all enthusiasm his health—his better health (cheers)—and his future prosperity; and let us hope that he will be enabled at all times throughout the coming year to preside over the meetings of the Farmers' Club (cheers).

Mr. CHARLES HOWARD, in responding for his brother Mr. James Howard, observed that the state of his brother's health was such that his medical adviser had urged him to lay by for

a few days, but he (Mr. C. Howard) trusted that the indisposition was only of a temporary nature, and that he would shortly be able to resume his ordinary avocations (cheers). He felt very much indebted to Mr. Read for the kind manner in which he had proposed his brother's health, and he could only say that no one was more sensible of the honour conferred upon him by his election to the office of Chairman of the Club than his brother himself (Hear, hear). His brother was essentially an agriculturist; and although perhaps he might not be, strictly speaking, an agricultural member, or a member of what was called the country party in the House, yet he believed no agricultural member or member of the country party could feel more alive to the interests of farmers than his brother did, and he would add that he should not believe in him unless that were the case (cheers and laughter). Not that his brother had not done very much himself for agriculture—he was sure they would all give him credit for that (cheers), but agriculture had done very much more for him (laughter). It was to agriculture that he owed his present proud position, and he felt quite sure that when matters affecting the agricultural interest came before the House of Commons, although he held political views somewhat different from those of his friend Mr. Read, he would be found doing all he could on behalf of agriculturists. He (Mr. C. Howard) could tell them that there was in fact very little difference of opinion on many subjects between Mr. Read and his brother. They sat, indeed, on opposite sides of the House, but when they got down to the smoking-room it was "Hail, fellow, well met" (laughter), and the difference manifest in the House was no longer visible (laughter). They had heard a great deal as farmers about what Parliament was going to do for agriculture, and how many agricultural members and members of the press were striving to promote their interest. He had been engaged in agriculture now for about five-and-twenty years, and during that period there had always been somebody who was going to help the farmer; but he did not know that the farmer had derived much benefit from help of that kind. In his opinion that had been tried long enough, and farmers should now help themselves (cheers). Hitherto they had relied too much on assistance from extraneous sources, and they must now help themselves a little (cheers). If men would take game farms, or farms on which they would have to trust to the kindness of the owner instead of having the security of a proper agreement, let them not afterwards ask the public to assist them on the ground that they were not properly treated. In conclusion he had to propose "The Smithfield Club," and in doing so he would observe in reference to some remarks made by the Chairman at the Club dinner on the previous day about the small amount of stock produced on many farms, that if landlords would be more careful to select men of skill and capital to occupy their farms, instead of accepting as tenants those who offered the highest rent, not only would more corn be produced and the land be better cultivated, but there would also be more food, in the form of cattle and sheep for the people.

Mr. BUCKLEY briefly responded for the Smithfield Club; and Mr. TREADWELL having given "The Committee of Management,"

Mr. COUSSEMAKER, after returning thanks, proposed "The Secretary," Mr. H. Corbet, and observed that the Club was most fortunate in having had for two-and-twenty years such an efficient officer to represent it (cheers).

Mr. H. CORBET, who was received with cordial and prolonged cheers, said if he consulted his own feelings only, he should content himself with returning thanks in two words; but as the officer of the Farmers' Club, he wished to say something about the position which it occupied in relation to agriculture. For a great many years it was the special weakness of the farmers of England that they had no representation, whereas the attendance of that evening spoke to a different state of things. There was the honourable member for Leicestershire (Mr. Albert Pell), and he saw one of its most respected members in the person of the honourable member for Norfolk, Mr. C. S. Read. He found that whenever any agricultural question had to be settled, whether the Government were Whig or Tory, Radical or Conservative—whatever those mysterious terms might mean (laughter)—the honourable member for Norfolk was consulted, while,

as regarded the Government side of the House, if a politician had to be knocked down, or a philosopher confronted on an agricultural question, there was the honourable member for Bedford ready to do it (laughter). Thus in the Chairman of the Club in the past and the Chairman in the future they were well represented in the House of Commons. As regarded the discussion of the previous evening, he could not help remarking he was more than surprised at some of the things to which he listened. For example, he heard one gentleman remark, in effect, that the question of tenant's right or tenant's improvements, was just being taken up by the Farmers' Club! That reminded him of the character of Rip Van Winkle: he would not say where the "Sleepy Hollow" was (laughter). It would appear that many members of that club had no idea of what it had really done in past times (Hear, hear). On the previous evening doubts were expressed as to whether anybody could distinguish between durable and temporary, or in other words, landlords' and tenants' improvements. Twenty years ago, as was shown by a Blue Book, the Farmers' Club did that: it then distinctly drew a line between landlords' and tenants' improvements (Hear, hear), and yet gentlemen now spoke as if they were utterly ignorant that this had been done. One gentleman suggested that the Farmers' Club should attempt to draw up a form of agreement. He (Mr. Corbet) hoped that the last thing that club would do would be to try and draw up a form of agreement which would suit all the counties of England (Hear, hear, and cheers). A Shropshire Society attempted that, and with the most lamentable result; the attempt of a Suffolk Society was an equal failure; and though the Royal Agricultural Society of England gave a prize to Mr. Cadle for an essay having the same object, he would assert, Mr. Masfen notwithstanding, that again the result was lamentable (Hear, hear). If he (Mr. Corbet) wanted to set up a shuttlecock for everybody to knock about he would draw up a model agreement (laughter). The most valuable evidence on this subject was laid before a Committee of the House of Commons in 1848, at the instance of that club, and it might still be referred to. It had struck him, and the idea had been in his mind for some years, that it would be desirable to make a digest of all the discussions of that club, extending over about twenty-five years, for reference on agricultural matters (Hear, hear). He could scarcely conceive anything more valuable, and the only thing which had prevented him from making such a digest himself was a doubt whether, instead of occupying only a volume, it would not run to a number of volumes. He believed that club never stood in such a good position as it did then (cheers).

The concluding toast was "The Visitors," for whom Mr. Garnet briefly returned thanks.

DEATH OF MR. ANTHONY HAMOND.

This well-known agriculturist and Norfolk Squire died at West Acre, in that county, on Monday, Dec. 13, at the comparatively early age of sixty-four; for he was until lately a burly hale looking man. He was elected a Member of the Council of the Royal Agricultural Society in 1848, and had for the last twenty years been a prominent figure at the Council meetings in London and the annual shows in the country. Mr. Hamond was a man of much ability, seasoned by a sarcastic humour peculiarly his own, and there were few greater treats than to hear him "roast" his dear friends and neighbours, or "thump London strangers" at meetings in his own county. His keen wit scarcely tended to make him popular, and he offered himself again and again, but always in vain, as a Liberal representative of his own county. Nevertheless, what he said was always the point, and long before the game abuse had reached its crisis it has now, he denounced his brother squires as "fast degenerating into poulterers. Game had become a commercial affair and he hoped that the system would soon end in thorough bankruptcy." Mr. Hamond, however, was a sportsman at heart and his son and heir, by a sister of the famous John Musters is now Master of the West Norfolk fox-hounds.

THE CENTRAL CHAMBER OF AGRICULTURE.

A meeting of the Council of the Chamber of Agriculture, followed by the annual meeting of the Chamber itself, took place on Wednesday, December 8, at the Salisbury Hotel; Mr. C. Sewell Read, M.P., presiding at both meetings.

At the Council meeting a balance-sheet was presented, which showed a balance at the bank of £265 2s. 7d., independently of £31 in the hands of the Secretary. £36 of arrears was, it was stated, due from district chambers—a statement which created surprise and dissatisfaction in the meeting. The Treasurer and Secretary were re-elected; and some discussion ensued as to the connection of one of them with some journal, but no explanation was offered as to the Sub-Secretary's connection with the *Daily Telegraph*.

The draft Report, prepared for presentation to the annual meeting of the Chamber, was then read.

Mr. T. WILLSON having moved, and Mr. HORLEY, jun., having seconded the adoption of the Report,

Mr. GEORGE ANDREWS moved the insertion in it of the following: "That, notwithstanding the increase of the number of members, and the means of the Chamber, the Council feel that the subscription list at present represents very inadequately the great body of the owners and occupiers of England and Wales." He remarked that the number of members was under 200; a state of things which he considered very unsatisfactory.

The resolution having been seconded, after a short discussion was negatived, and the Report was then adopted, as prepared by the Business Committee.

The annual meeting of the Chamber followed immediately after.

The following Report of the Council before referred to was presented:

The Report stated that the progress of the Chambers of Agriculture during the past year had consisted chiefly in consolidating and extending the influence of the organizations which sprang rapidly into existence in the years 1867 and 1868. Thus, while all the chambers had added to their power by gathering in many new supporters, the two important ones of Cheshire and Monmouthshire had doubled their list of members within twelve months; the Banbury and the Herefordshire Chambers had increased to the extent of two-thirds; the Peterborough and the Warwickshire Chambers had grown one-fourth; the Leicestershire Chamber had added one-sixth, and the Essex and Worcestershire Chambers one-seventh. The work of planting centres had also been proceeded with, so that five chambers had been placed on the list since the issue of last year's report; while active measures were now in progress for the establishment of new chambers in several counties, and the Chamber of Agriculture movement had also been set on foot in Ireland. The number of members in the provincial chambers actually reported to the Council early in the year was 14,500, and, allowing for an increase up to the present time and for eleven chambers which had not returned the precise number of their members, the total constituency of the Chambers of Agriculture at the close of this year was probably upwards of 17,000, and the collective annual income of the chambers £3,000 or £9,000. There were now 71 chambers and branch chambers, of which 51 had contributed during the year to the funds of the Central Council a total sum of £245, entitling them to send 100 deputed members to the Council meetings. The Council, therefore, was at present composed of 100 members representing the provincial chambers, together with 26 members elected by the subscription members of the Central Chamber. To the total sum of £245 furnished by the provincial chambers, the subscription members of the Central Chamber added about £185, making the total income of the Council for the year about £430, being an improvement of about £65, or nearly one-fifth over that of last year. The Council acknowledged with satisfaction the valuable aid of the Press, particularly of the agricultural newspapers, in reporting the proceedings of the Chamber and the meetings of the Council. Having glanced at the subjects discussed in the course of the year, the action of the Council with reference to

local taxation and the present aspect of that question, the measures taken in promoting the successful opposition to the Valuation of Property Bill, and the passing of the County Administration Bill and the Adulteration of Seeds Bill, and having enunciated the views of the Council and Chamber on the malt-tax, the over-preservation of ground game, the existing method of taking the corn averages, and a uniform system of weights and measures, the Report mentioned that the resolutions of the Council on the subject of corn averages and weights and measures on being forwarded to the Board of Trade elicited the following answer from that department of the Government:—

"Statistical Department, Board of Trade,

"Nov. 26th, 1869.

"SIR,—I am directed by the Lords of the Committee of Privy Council for Trade to acknowledge the receipt of your letter of the 9th inst., forwarding a copy of resolutions passed unanimously by the deputed members of the Chambers of Agriculture, at a Council Meeting of the Central Chamber, upon the system of taking the corn averages, and upon the mode of selling corn. And I am to request you to be good enough to inform the Council of the Central Chamber of Agriculture that, as regards the corn averages, the Government will be ready to pay every attention to representations respecting the operation of the system of taking the corn averages, and will carefully consider any proposed change of the system that may be deemed equitable by the payers and receivers of tithes; and, with reference to the mode of selling corn, that, as the subject of weights and measures of the United Kingdom is before the Commissioners appointed to inquire into the condition of the Exchequer Standards, a copy of the resolutions of the Chamber bearing upon the standards for the sale of corn shall be forwarded to the Standards Commission for their consideration.

"I am, Sir, your obedient servant,

"R. W. FONBLANQUE."

The Report further enumerated the steps taken by the Council with reference to the importation of foreign cattle and the measure proposed by the Government, which subsequently became law, for the prevention of the spread of contagious diseases amongst home-bred stock. The Council add the expression of their "regret that, notwithstanding the strenuous efforts of their friends on both sides of the House, so few of their proposed amendments were accepted by the Government. The bill as passed leaves the whole action and responsibility of regulating the import of foreign stock in the hands of the Privy Council, and the way in which those duties have been performed may be gathered from the fact that foreign sheep which have been associated with diseased animals were allowed to go into the country, and have caused the fearful outbreak of foot-and-mouth disease from which the agricultural interest is now suffering."

Mr. T. WILLSON moved that Sir Massey Lopes, M.P., be the Vice-Chairman for 1870.

Mr. ELLIS seconded the motion, and it was passed unanimously.

The following were elected to fill the vacancies caused by the retirement of eight members of the Council by rotation, the first six being retiring members re-elected, and the last two new members:

Mr. R. Masfen, of Pendeford, Wolverhampton.

Mr. R. J. More, of Linley Hall, Bishop's Castle.

Mr. A. Poll, M.P., of Hazelbeach Hill, Northampton.

Mr. C. Sewell Read, M.P., Honingham Thorpe, Norwich.

Mr. E. Riley, of Kipling-cotes Farm, Beverley.

Mr. J. Smyth, of Newells Bury, Royston, Herts.

Capt. P. G. Craigie, of Partney Grange, Lincolnshire.

Mr. T. Rigby, of Over Winsford, Middlewich.

The auditors having been reappointed,

Mr. DANIEL LONG moved, in pursuance of notice, that retiring members of Council shall not be eligible for re-election for one year. He thought that such an arrangement would

tend to increase the subscriptions; while, as regarded the objection that it might deprive the Chamber of the services of valuable members of Council, he remarked that such gentlemen might still be deputed members.

The motion, having been opposed, was negatived, 8 hands being held up for, and 22 against it.

Sir M. LOPES, M.P., as chairman of the local taxation committee, presented the following report: "The questions embraced by what is commonly spoken of as local taxation have been before the country and the legislature for several years, and in 1850 a committee of the House of Lords decided that the relief of the poor was a national object, towards which every description of property ought to contribute. Not only has this charge now considerably increased, but additional burdens—such as police, highways, vaccination, registration, lunatics, militia stores, shire halls—have greatly aggravated the amount, and multiplied the objects of local taxation. Until the formation of the Central Chamber no great prominence was given to the consideration of this question, although the necessity for fresh legislation had been affirmed by the high authority of the House of Lords. The Central Chamber, formed in 1867, considered this question one of the greatest grievances which the agricultural interest was subjected to, affirmed the injustice of the present system of local taxation, and urged the chambers throughout the country to take up the question. This was done with alacrity, and during the past two years no question has been more extensively canvassed, and upon no one does there prevail such unanimity of opinion. The Somerset Chamber took up a leading position in the matter, and, after discussing the subject, a copy of their resolutions was forwarded to every chamber in the country. In February, 1868, Sir M. E. H. Beach moved in the House of Commons for a return on local taxation. In May, the same year, Sir Massey Lopes brought the question prominently before the House, and in June Mr. Corrance moved for a select committee; but, owing to the lateness of the session, the motion was, after an animated discussion, withdrawn. Again, in July, 1868, having previously been discussed by almost every Chamber in the United Kingdom, the question was finally brought before the Central Chamber at Leicester, on a motion by Sir George Jenkinson. On the proposition of Mr. Pell, the following resolution was passed: 'That a committee of the House of Lords in the year 1850, having decided that the relief of the poor is a national object towards which every description of property ought to contribute, this meeting recommends the chambers of agriculture to support by every means in their power legislation for carrying the principle into effect.' The resolutions passed by the chambers were very ably condensed in two of the resolutions presented at the interview of the deputation from the Central Chamber with Mr. Gladstone on the questions, viz.: (1) 'That the unequal pressure of the poor-rate, as at present imposed, is a grievance which renders necessary the early and serious consideration of Parliament.' (2) 'That the maintenance of the poor is a national liability, to which income from every source should contribute.' It will be remembered that the opinions of the chambers were forcibly set before Mr. Gladstone by Mr. C. S. Read, M.P., Mr. Randall, of Lincolnshire, Mr. Hodson, of West Kent, Captain Craigie, and Mr. Thomas Duckham. At the commencement of his reply, Mr. Gladstone said, 'I was very anxious you should feel assured we were very sensible of an imperative obligation to give our best attention to a matter of such importance;' and finally he added, 'I fully agree with Mr. Read that it is a question which is entitled to the gravest consideration, apart from political parties.' A month elapsed, and then upon the motion for a royal commission, moved by Sir Massey Lopes, the ministers had an opportunity of giving a more deliberate reply to the questions previously submitted. After the discussion on the motion, Mr. Goschen admitted that the question, which affected both town and country equally, must be dealt with speedily. It occupied now the attention of the Government; but it must be dealt with by Parliament, and not by an irresponsible tribunal like a royal commission, one result of which, he pointed out, would be to hang the question up indefinitely. After some further discussion, Mr. Gladstone said the motion was one which recommended itself by every motive which could address itself to the indolence and indifference of an administration; because, if the Government were to accept that motion and appoint a commission for the purpose recommended by the hon. baronet, it would give the

Government a lease of several years' peace and tranquility in reference to the discussion of the matter. As regarded the suggestions of one or two hon. gentlemen that a committee of that House should be appointed, he would only say that he looked upon the subject as beyond the range and scope of a committee, and he could not forbear from expressing the opinion that the Government would be in a manner shrinking from their just responsibility were they to propose a general relegation of the question to a select committee. He hoped it would be understood from his remarks that the Government was by no means insensible of the importance, and he would even say of the urgency of the question; and, if indisposed to accede to the motion of the hon. member, it was not because it was indisposed to the performance of its duty, but rather because it did not wish to turn that duty over to an irresponsible body. The committee regard with the utmost satisfaction the result of this debate, and await with anxiety the fulfilment of the pledges given by the Government. With the view of concentrating the objections, and exposing the anomalies of the present system into one form, the committee offered a prize of £50 for an essay which should deal with the whole subject; and they have much pleasure in reporting that sixteen essays have been received. As these are now in the hands of the adjudicators, it is not desirable to say anything further at present. The preparation and dissemination of useful information on this great question is one of the principal labours devolving upon the committee; and for this purpose liberal money contributions are indispensable. Up to the present time about £250 in donations have been received or promised from different Chambers, in sums varying from £2 to £50; but a much larger sum will be necessary to enable the committee to prosecute their work with vigour and success; and it is to be hoped that landholders and householders, as well as tenant farmers and occupiers, will see how interested they are in aiding and supporting this important movement."

On the motion of Sir M. LOPES, M.P., seconded by Mr. T. WILLSON, this Report was adopted.

Mr. T. DUCKHAM moved the following amendment of Rule 3, postponed from the last annual meeting:—"Local Chambers subscribing in advance the sum of Five Pounds per annum, to the funds of the Central Chamber, to have the power of sending a Deputed Member to the Meetings of the Council, Two Members for Eight Pounds, and an additional Member for every Two Pounds subscribed—such Members to be called 'Deputed Members of the Council.'" He contended that it was very desirable to increase the income of the Central Chamber, and that, considering the great importance of the objects in view, it was but reasonable that the subscription of £5, which was the amount fixed when the Chamber was in its infancy, should now be raised to £5.

Captain CRAIGIE having seconded the resolution,

Mr. ARKELL opposed it, urging that an increase in the amount of the subscription of the Local Chambers would not necessarily augment the aggregate received, and that many of the Chambers being small market ones, could not fairly be expected to contribute £5 per annum; while, on the other hand, many of the larger ones might easily subscribe £10 or £15.

The motion was afterwards opposed by Mr. T. CHANDLER and Sir G. JENKINSON, while the Chairman recommended its postponement, and it was ultimately withdrawn in deference to the general feeling of the meeting.

The CHAIRMAN announced that the subjects appointed for discussion in the ensuing year were as follows:—In February, "The Best Means of providing for the Future Maintenance of Turnpikes and Highways" and "The Present System of collecting Agricultural Statistics"; in March, "The Best Mode of providing Means for the Extension and Maintenance of the Education of the Industrial Classes"; in April, "The Causes now in Operation which discourage the Application of Capital to Agriculture"; in May, "Local Taxation," the precise terms of the subject to be settled on a future occasion. The June meeting of the Council was fixed for the 14th, a change being made in consequence of the first Tuesday in that month falling in Whitsun week.

Mr. ARKELL called attention to the fact that the conserrators of the Thames are going to apply for extraordinary powers as regards the management of that river from its source to London, remarking that the question was not a mere local one, commissions having been appointed to inquire into the state of other rivers,

The CHAIRMAN recommended Mr. Arkell to lay the subject before the Council; and, at the same time, expressed a hope that local chambers would in future not only discuss the topics originated by the Council, but do so at the proper time.

On the motion of Mr. T. WILLSON, a vote of thanks was

given to the Chairman for the manner with which he had performed the duties of the office of President during the past year.

The CHAIRMAN having briefly replied, the meeting separated.

CALENDAR OF AGRICULTURE.

This month is the stormiest period of the year, in continued frosts and deep snows in northern latitudes, and in heavy rains and furious winds under more benign climates. The ploughing of stubbles of clays and loams for fallows of wheat and root crops will be finished early in the month, and grass leys ploughed for Lent crops, always preferring the clay lands, to have the benefit of exposure to effect the pulverisation of the soil. This month suits very well for this purpose, and does not, by a very long exposure of the land in a ploughed state, reduce it into a hard, battered condition. The ploughing of all lands, stubbles, and leys, for fallows and crops is very advantageously performed during this month.

During the frost and snow of northern localities, the farmer's attention will be directed to carting operations of every kind—of stones to drains and roads, fuel to all house-holders on the farms, and of earths and lime for the purpose of compost manures. Deliver grains to the merchant, if any be sold, and perform all work of carting that may occur.

On lands that have been missed in autumn, sow wheat of the Lammas or spring varieties where the latter is used; the former may be later in harvest, but will be an equal crop.

In fresh weather continue the cutting of copes and underwoods, the cutting and plashing of hedges, the scouring of ditches and road sides; and clear water courses. Collect to be mixed well all earthy and vegetable matters, to be converted into a compost manure of great value; cut field drains to half the depth, to be finished in summer.

Plant trees of all kinds in clumps; single standards in underwoods, and along with new hedges. In all cases select healthy and vigorous stems of some years in growth.

Flood watered meadows, and lay dung occasionally.

The live-stock on the farm of every kind will demand the most constant attention of the farmer, if he would rear the animals to profit, and derive advantage from his labours. Never forgetting the great effects of minute care in increasing the produce of a farm, supply to the cattle in the yards, and to the horses fresh straw daily from the frequent thrashings of grain by machinery, or the constant use of the flail. Spread all litter evenly and thinly over the yards into level surface, and remove the straw cribs frequently, in order to prevent the dry position underneath remaining in a different quantity of dung from the surrounding mixtures. Give turnips or other roots early in the morning, that be cattle may eat during the day-light, and be seen when choked or swollen. The quantity given be the utmost that can be consumed by fattening animals without waste, and to store animals

about half that allowance. Turnips are best in quality when drawn from the field daily for use; but the risk of heavy snows covering the crop, and heavy rains rendering the access inconvenient, obliges to have a month's consumption in store at the homestead to supply the constant demand. A storing beyond three or four weeks lessens the quality of bulbs and tubers. A few young store pigs are very useful to roam in the cattle yards, and pick up any shells of or remnants of roots that may fall from the cribs, and to move and turn over with their snouts the straw and dung, in search of pickles of grain, and thus mix the various articles of the contents of the yards. The animals pass from yard to yard, and through a hole cut in the under bar of the gate except one.

The milch cows will now begin to drop calves; feed the dam with succulent food, with steamed roots, and chaffs. Juicy food is most essential to the secretion of milk. Suckle calves for any special rearing of animals; and feed others from the pail: but for any purpose suckling will be preferred, as no substance yet known can equal nature's milk from the mother, transferred from the udder into the stomach without exposure or evaporation. The cows may be divided into a suckling and a milking lot, to rear animals, and to produce cream, butter, and cheese. Have the calf pens divided into single apartments of about four feet by eight feet, opening into the cow shed from the end or from behind, if the width of the shed admits. The apartments are boarded in the floors, pierced with augur-holes to remove moisture, with a box or two in the corners to hold chalk or rock salt, to be licked by the animals, which are fed thrice daily.

The sheep in the fields require fresh turnip daily pulled from the ground, rooted but not topped, and carried to a stubble or ley ground, or confined by hurdles on the growing crop, and should have fresh ground every two or three days, or be confined in folds, or cleaned, and fed with sliced turnips placed in troughs. This last method is chiefly for fattening flocks. Early lambs will be dropped in some places. Juicy food must be largely allowed to the ewes, and a warm shelter in covered sheds, with an open yard.

Feed bacon hogs twice a-day with steamed roots, as steamed potatoes mashed and mixed with meals and bran. The food of brood sows may be thinner and more washy. Store pigs may have the roots in a raw state, and one feed of cooked food daily. Bacon hogs must be finished for the market by a month's feeding with hard corns, as oats and beans, to produce firmness and whiteness in the flesh. Barleymeal is the favoured food for pigs in a prepared condition.

The poultry must not be neglected. Feed with

light grains and steamed potatoes, with meals, and given in troughs, placed under a shelter sheet. Poultry houses should be heated underneath the boarded floor by pipes of hot water from the boiler house. By this means the laying of eggs and hatching of chickens will be continued throughout the year.

The foremost fattening bullocks and the early bacon hogs will come into market this month, and will command a higher value beyond later

articles. This circumstance should stimulate the forward provision for the market of the early produce.

Work-horses are best maintained on dry food, as oats and beans, chaffs, and dried herbage. But one meal daily in the evening after work may be useful, of steamed potatoes, boiled barley, with other roots and grains. The horse is a dry feeder, and warm meats may open the skin to colds, from the great exposure of the animal.

CALENDAR OF GARDENING.

KITCHEN GARDEN.

The directions of this month are necessarily few, as the weather is the stormiest of the year, in heavy cold rains in the southern parts, and in the northern with long-standing, iron-bound frosts overlaid by deep snows that cover every surface under a canopy of the severest cold; consequently, with a glorious uncertainty of weather, it is impossible to do more than suggest. At all events, they who desire to have lettuces, radishes, and salads early must be possessed of frames and lights. We do not allude to forcing, but simply to protection, yet this will imply some kinds of linings, either of dung, fern, or straw, laid so thick around the box and lights or brick pits, so as to exclude a frost of 20 degrees, which frequently visits us, and lasts many days. Every vegetable grown in frames ought to have air in fine intervals by day, but the sashes should be closed every night, and be covered whenever it freezes with straw-mats, the most effectual means of defence that can be constructed.

If the weather and ground be open, the green and white cos lettuce, and the brown Dutch, and also a sprinkling of short-topped radish, can be sown on a warm border: the earth should be free and open and rich, to promote a quick growth, and straw or fern should be at hand to throw over the surface during hard nights. Sow radishes twice over.

A little brown carrot seed, a drill of round spinach, and some mustard and cress, may be sown, but little good will result in general.

Peas and broad beans should be sown at least 2½ or 3 inches deep, in soil enriched in the autumn.

Earth up peas and beans if any be ready, observing to select the driest weather. Transplant cabbages from the seed beds.

If frosty, protect the frames and caniflowers under glasses; celery by a couple of boards laid ridgewise, or by straw on each side of the ridges; wheel out manure to be ready for plots, asparagus beds, &c., &c.

Dung applied to the ground in the spring is the better from being fermented in a heap, with the process still going on when placed in the land: the heat is very useful to the germination of seeds, and to the tender plants or the young growth, and the dung is in a condition for a ready amalgamation with the fresh-dug lands of the winter exposure. On the other hand, manure that is

saturated with moisture, as in the liquid pit, and consequently in a comparatively fresh condition, being applied to the ground in autumn, enjoys the winter months during which to decay in the land, amalgamate with the soil, and produce the black humified earth of mutual contact, which is both the product and source of life, and well known to be most highly beneficial to vegetation. Substances in a fresh state, with inherent or imbibed moisture, when used as a manure for the purpose of an immediate effect, tend to produce fibres, rootlets, and leaves rather than roots and fruits, which is avoided by using fresh dung in the autumn applications, and the fermented heaps in the spring operations.

Fermentation is very beneficially excited and continued by frequent waterings of the heap of dung with urinary and soapy liquids; and a proper mixture of the different matters in the heap, the wet with the dry, and the half-rotted with the wholly-decomposed, must be effected by turning over the heap with a fork, and with a minute attention to shake out the clods or lumps. Place in the inside the former—the whole mass in a new position of mixed matters, with a light weight. Two turnings of the heap may be required to make the changes that provoke fermentation with the new conditions and capacities of bodies. Nearly the whole value of manures rests on this result being obtained in the proper state and quantity.

FRUIT DEPARTMENT.

Prune very little unless the buds swell materially. Lay manure around the roots of raspberries, gooseberries, and currants, which very largely hastens and improves the spring growth, and increases the quantity of fruit. Place dung around the roots of fruit-trees and espaliers to produce the same results, which will be improved by placing a thin grass turf or a thin layer of soil over the animal dung that is used as mulch.

In fresh weather during the month plant trees of all sorts in clumps—standards, fruits, and berry-bearing bushes. Plant each kind in a separate connection, to preserve the generic affection which is seen to prevail in the vegetable world. Shake snow from off evergreens to save the foliage from scalding.

FLOWER GARDEN.

Little can be done in this department at this season of the year. Sow seeds in pans, mark

each, and place them in a frame. Perennials are mostly all to be propagated from the roots by divisions, slips, and cuttings, which may be

planted in the open weather of the month, along with all hardy and semi-hardy flowers of strong stems and fibrous roots.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR DECEMBER.

During the past month the wheat trade has continued in an extremely depressed and inactive state. The receipts of foreign produce have been very heavy, and altogether in excess of the calculations made at the opening of the season, while, as we write, there is a further considerable quantity of produce on passage from all quarters. Millers have, therefore, operated with great caution, as it became evident that they would be easily able to supply their wants, from time to time, if prices did not further recede, and events have fully justified their course of action. As a necessary consequence of these retail sales, the larger portion of the arrivals have been warehoused, and the demands for granary accommodation have been very great, so much so that at one time no little difficulty was found in obtaining storage room. We believe, however, that there is now full provision for all probable demands. It may be observed that the accumulation of produce, though large, comprises little of superior character, as the arrivals of Baltic and Danish wheats have not been extensive. A great proportion of the wheat in granary consists of Russian and American qualities, which have been much depressed throughout the month, though somewhat firmer in value towards the close; whereas there has been little disposition shown to accept lower prices for fine Baltic descriptions. Prices are not now likely to recede much lower, as any further reduction would again bring the continent into the market. Already several cargoes have been taken for near continental ports, the result being a slight reaction in values, which, however, has also prevented further operations on continental account. The general aspect of the market is such as to induce speculators to venture large purchases for holding, but there is an evident feeling that prices have now seen their lowest point, and as this opinion becomes more prevalent we may anticipate a return of animation, millers being unusually bare of stocks. The quantity of grain on hand, however, is too great to allow of any considerable advance in prices, and we therefore look for a steady upward movement, rather than for an excited demand.

The tendency of prices, both on the continent and in America, has been downwards, but the quotations current on this side have been too high to allow of further extensive shipments. The closing of the navigation for the winter has also had the effect of curtailing operations for the market; but the quantity of surplus produce still on hand in the south of Europe and in America is very large, and continues to make its appearance at the ports of shipment. It is expected that shipments will be resumed as soon as the navigation reopens.

The spring corn trade has ruled extremely dull throughout the month. The mild character of the past season, and the abundant supplies of maize on offer have tended to curtail the demand for feeding stuffs, and prices have accordingly been influenced in a downward direction. At one period of the month oats were extremely depressed, but a better feeling has since prevailed. Beans and peas are 3s. to 4s. per qr. cheaper than when we last wrote. Inferior and grinding barleys are also lower in price, but fine malting descriptions have maintained late rates.

Large forced sales of potatoes have continued to be made. The receipts at the metropolitan markets have been considerably in excess of the demand, and very low prices have been submitted to. The imports of foreign produce, however, have not been very extensive.

There has been a firm feeling in the hop market. With a decidedly short home crop, and disappointing importations, the trade has ruled more active, and a heavy advance has taken place in the quotations. It was anticipated that the arrivals of American hops would be very heavy; but up to this time the expectation has not been fulfilled.

The metropolitan hay markets have been fairly supplied with hay and straw, but the trade has ruled dull throughout the month, and prices are lower on the average.

Wool has been firm, although the transactions have not been very extensive. All qualities have met a fair demand, but choice lustrous and fine descriptions have been in steady request. It is believed that the improvement in the yarn trade will be maintained, and that the demand for wool will be more active in consequence.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

The month of December is, without exception, the most eventful month of the year, so far as the cattle trade is concerned. Judging from the appearance of the stock exhibited on the "Great Day," the time-honoured custom of producing fat cattle for Christmas consumption has by no means deteriorated. The supply both as regards number and condition was very fine; but, at the same time, we do not think that it in any way exceeded expectations, as the necessary adjuncts for bringing stock to perfection have been liberally supplied throughout the season. On the whole, however, the show was a decided success. During the month the receipts of beasts have been on a full average scale, and a heavy increase has been noticed in the actual weight of meat. At the earlier part of the month there was a healthy demand, especially for prime stock, and the best breeds realised 5s. 8d. to 5s. 10d. per 8lbs. So soon, however, as the wants incidental to Christmas time had been met, the trade assumed quite a nominal character, and the best Soots barely realised 5s. 8d., the more general quotation being 5s. 6d. per 8lbs.

As regards sheep the supply has not been extensive, but some good serviceable stock has been exhibited. Prime breeds have been in healthy request at full prices, realising as much as 6s. per 8lbs.; but inferior qualities have been difficult to move. As in the case of beasts the demand flagged with the satiating of Christmas requirements.

Calves have changed hands quietly, but full prices have been realised. A moderate supply has been offered.

Pigs have been dull, but steady in value.

A satisfactory feature has been the cessation of the foot-and-mouth disease, owing to the cold weather; and it is to be hoped that measures will be adopted to prevent a fresh outbreak with the advent of milder weather.

Until very recently cattle have been enabled to obtain a fair feed in the pastures; but the severe frost has since effectually checked the growth of vegetation, and the demand for feeding stuffs has, in consequence, improved.

The imports of foreign stock into London have been as under:

					Head.
Beasts	...	...	...	...	5,896
Sheep	...	...	...	...	34,130
Calves	...	...	...	...	1,670
Pigs	...	...	...	...	3,119
Total	...	...	...	...	44,815
Same time in	1868	...	...	...	17,231
"	1867	...	...	...	38,336
"	1866	...	...	...	34,658
"	1865	...	...	...	66,721
"	1864	...	...	...	41,712
"	1863	...	...	...	34,435
"	1862	...	...	...	25,435
"	1861	...	...	...	21,904
"	1860	...	...	...	20,795
"	1859	...	...	...	17,430

The total supplies exhibited in the Metropolitan Cattle Market have been as follows:

	Head.
Beasts	25,689
Sheep	24,170
Calves	1,946
Pigs	680
Total	122,485

COMPARISON OF SUPPLIES.

	Beasts.	Sheep.	Calves.	Pigs.
Dec. 1868	17,770	81,780	935	1,070
1867	21,910	92,490	943	1,880
1866	20,750	71,390	1,053	1,950
1865	31,720	128,170	2,823	2,930
1864	23,780	78,410	1,441	2,700
1863	29,302	88,470	1,150	2,680
1862	25,810	85,621	1,354	3,082
1861	24,840	84,630	701	2,950
1860	24,540	82,340	1,577	2,445
1859	24,484	78,980	1,171	2,187
1858	20,523	74,275	1,472	2,450
1857	19,830	67,132	1,209	1,915
1856	23,995	73,200	1,525	2,880
1855	22,412	90,030	1,876	3,184
1854	20,219	88,880	1,573	2,746

The arrivals from our own grazing districts, as well as from Scotland and Ireland, thus compare with the three previous years:

	Dec. 1869.	Dec. 1868.	Dec. 1867.	Dec. 1866.
From—				
Lincolnshire, Leicestershire, & Northamptonshire	7,620	7,845	9,700	9,550
Norfolk, Suffolk, Essex, and Cambridgeshire	1,900	550	2,000	650
Other parts of England	2,480	2,330	2,500	2,700
Scotland	1,954	2,190	1,710	1,560
Ireland	2,990	1,292	1,042	2,670

Beasts have sold at from 3s. 4d. to 5s. 10d., sheep at from 3s. 6d. to 6s., calves 4s. 2d. to 6s., and pigs at from 4s. 4d. to 6s. 4d. per 8lbs., to sink the offal.

COMPARISON OF PRICES.

	Dec., 1868.	Dec., 1867.
	s. d. s. d.	s. d. s. d.
Beef from	3 2 to 5 8	3 4 to 5 2
Mutton	3 0 to 5 6	3 4 to 5 0
Veal	3 8 to 5 10	4 4 to 5 4
Pork	3 6 to 4 8	3 2 to 4 2
	Dec., 1866.	Dec., 1865.
	s. d. s. d.	s. d. s. d.
Beef from	3 4 to 5 6	3 2 to 5 6
Mutton	3 8 to 6 4	3 8 to 6 8
Veal	4 2 to 5 10	4 0 to 5 0
Pork	3 6 to 4 6	4 0 to 5 4

About an average supply of meat has been offered in the dead-meat markets. With a rather quiet trade, prices have ruled as follows: Beef from 3s. 4d. to 5s. 2d., mutton 3s. 4d. to 5s., veal 4s. 10d. to 5s. 4d., and pork 4s. 4d. to 5s. 8d. per 8lbs., by the carcase.

AGRICULTURAL INTELLIGENCE,
FAIRS, &c.

DONCASTER FAT CATTLE MARKET was well supplied, and at which there was a good attendance. Some prime useful, well-fed bullocks and heifers were on offer, and a good business was done, notwithstanding that most of our leading butchers had already supplied themselves from the large shows and from local breeders. All prime lots made good prices—beef averaging from 8s. 6d. to 9s. 9d. per stone. Not a large supply of sheep, but what were on offer met with ready purchasers and moved off briskly at from 8d. to 8½d. per lb. for shearing sheep, and 7½d. to 8d. per lb. for ewe mutton.

MARKINCH GREAT MARKET.—There was a capital turn-out of cattle, and the lots of fat shown were superior in quality. There was a good attendance of dealers, and a large amount of business was transacted. The top fat sold at from 9s. 3d. to 9s. 9d., and middling and inferior at from 8s. to 8s.

6d. per stone. Among the lots of fat animals disposed of, the following may be mentioned: A prime lot of three stots a £30 10s. a-head, a superior got lot of four at £22 10s., a capital lot of six at £23, three at £23, two queys at £15, two queys and a cow at £18 a-head. Farrow cows sold at from £12 to £14 a-head, and milch cows at from £12 to £22.

MUIR OF ORD FAT STOCK MARKET.—Although the number of animals shown was large, the demand for beasts exceeded the supply, and consequently good prices were obtained. Fat cattle sold at from 75s. to 78s. per cwt. Calves were in great request, and the long prices required by sellers were exceeded to by purchasers. A few lots of sheep were on the ground, for which good prices were also obtained.

NEWMARKET FAIR.—The prices of sheep and store cattle advanced, but bacon remained stationary at recent rates. Fat beef from 56s. to £3 per cwt.; new milch cows from £9 to £15, according to quality; springers from £8 to £14; strippers from £6 to £11; store hoggets from 30s. to 40s.; lambs from £1 to £1 8s.; fat sheep from 35s. to 52s.

PRESTON FAIR.—With few exceptions, the beef was only of moderate quality. There was a fair supply of sheep and calves of good quality. Beef fetched from 7½d. to 8½d.; mutton from 8½d. to 9½d., and veal from 7½d. to 8½d. per lb.

WORCESTER FAIR.—The show of fat cows, oxen, &c., was greatly under that of last Christmas, but good prices were maintained, principally 7d. to 8½d. per lb., and extraordinarily prime 9d. per lb. The top price was obtained for a heifer, fed by Mr. Pratt, of High Green, viz., £39 10s. Of sheep there were very few, and for these prices ruled good. Best wether mutton fetched 8½d.; ewes, 8d. per lb. Pigs were numerously represented, the show of porkers being in excess of recent years. Prices ranged from 12s. 6d. to 14s. per score.

IRISH FAIRS.—**NEWPORT (CO. MAYO):** First-class lots of three year old heifers and bullocks were sold at prices varying from £17 to £21 each. Second-class quality sold at from £15 to £18 each, and inferiors, which were not very numerous, from £11 5s. to £15. Good springers (scarce) changed hands at from £18 to £20; milchers (top lots) went briskly at very remunerative prices, in some cases as high as £17 each. Two year old bullocks and heifers sold readily at £14 to £16 10s. each, while inferior kinds went at £11 and upwards. Yearlings were also plentiful, and brought good prices; heifers went at £6 and £7, and bullocks from £4 to £6 10s. per head; stirks from £8 each upwards; weanling calves from £2 to £4; strippers sold at from £9 to £11 each. Best pork sold at 57s. and 58s. per cwt.; stores sold from 3s. 15s.; heavy fat pigs, which were largely supplied, went from £5 10s. to £7 10s. each; bonhams, which were numerous, sold at 20s. and £1 5s. each. Best mutton may be stated at 7½d. per lb.; best fat widders, 5½s. to 6½s. each; fat ewes from 25s. to 50s. each; ewe mutton sold at 6d. to 6½d. per lb.; lambs from £1 5s. to £2. Good cart horses brought prices as high as £16 and £17, and nags went at from £8 to £11 each.—**BALLYVAUNIS:** Springers and milch cows sold at from £13 to £20 each, three year old heifers, £11 to £15 each; two year old do. £7 to £10 each, yearlings from £4 10s. to £6, three year old bullocks from £11 to £15 each, two year olds from £7 to £10 10s. each, and yearlings from £4 5s. to £5 each.—**NEWPORT:** Some very important lots were disposed of at prices averaging from £11 to £13 for store heifers and bullocks. The majority of the stock were from mountain pasture, and consequently this class met with much dulness and prices tended downwards. The sheep department was rather diminutive, prices steady and demand dull. The following might be quoted as the average prices:—Three years old heifers and bullocks from £11 10s. to £13, two year old do. £9 to £10, yearling, £7 to £8, milch cows £11 to £12; not much in request.

CARMARTHEN BUTTER MARKET, (Friday last.)—Weather very fine, frosty, and most seasonable. The supply of Butter very limited again to-day. It is supposed farmers are holding back for higher prices. Market without change to-day, varying from 120s. to 126s. per cwt. for good dairies. Cheese steady at 27s. to 30s.

GLASGOW, (Wednesday last.)—There were 2,629 cheese laid down, and 2,149 sold. Business slow, but no quotable change in price. Cheddars, 59s. to 72s.; Dunlop, 65s. to 66s. per cwt.

MR. HENRY J. MEAKIN'S SALE OF SHORTHORNS.

BY MR. STRAFFORD.

The middle of December, after all the fat shows, is not exactly the pleasantest time of year for the sale of an entire herd of Shorthorns. The stock may look fresh from the houses, well and good; but they may also look, fresh from the pastures, very poor and bad—and such was the case with Mr. Meakin's cattle. The catalogue was only attractive for a few animals of "fashionable blood;" one especially, Fidget 7th, drawing inquiries and admirers from all parts of the kingdom. A "Bates upon Knightley" also made the journey worthy; but great was the disappointment of the number to find "Charming Maid," a poor, thin cow, with good form and a stocked udder, and Fidget 7th, with a pure pedigree of Bates blood, and no appearance of a thorough-bred animal save a little style; but, such are the caprices of fashion, the former went for 170 gs., and the latter 210 gs., both to Messrs. F. Leney and Son. Mr. J. K. Fowler and Mr. Slye were keen bidders for the "Bates upon Knightley" element; but the "pure Bates" was put in at 40, to the great astonishment of the locals, who freely talked of her market value, no flesh and no udder, as £14, and then not everybody's money, even with store cattle dear and scarce. Fifty was the next bid, and away she went rapidly to 120, which Mr. Thos. Bell, formerly of Kirklington, offered; 140 came from the representative of Col. Kingscote; and "Fifty" said the auctioneer. To the no small surprise of the distinguished *Stile*, a man in a blue coat bid and rattled away at five and ten guinea bids to 306; "ten, two hundred and ten, and the glass runs," and it did run in earnest, and out too. No name being called, it was assumed that the man in the blue coat had bought her, and somebody shouted "Is it to kill?" but it turned out that she was to join that vast multitude at Watlington, the last bidder being Mr. Geo. Allen, Knightley Hall.

The other cattle scarcely call for any notice. The first four cows went only at market value; Empress, a large, useful cow, bred from a Derbyshire herd, made 35 gs. from Mr. Parr; and the preceding lot to Charming Maid, a five-year-old cow of old Berghley Park blood, and six months in calf, realized 17 gs. One of the best-looking animals, an in-calf four-year-old heifer, with two crosses of blood, made 36 gs. to Mr. Parr. Lady Geneva, of the Walnut family, with a Booth Gwynne and Bates cross, was bought for Lord Dunmore at 75 gs., and her heifer calf by Duke of Cumberland fell to Mr. J. K. Fowler for 50 gs. A poor white heifer of the Zeal tribe sold for 53 gs. to Mr. Willingham Fowler, and Mr. J. P. Foster got the best of two heifers from the Chantress family at 33 gs. Two bought-in calves from a neighbouring sale made respectively 11 gs. and 8 gs.

The first bull was sold as fat stock for £45 5s., and a pretty roan bull calf, out of Empress, went to a Derbyshire farmer for 35 gs. Mr. J. K. Fowler bought Charming Maid's white bull for 37 gs.; and the sale of some fat bullocks and heifers, at fair market value, wound up the business. The average of £37 for 38 head is no small result for a winter sale of poor stock; and the company, many of whom got fairly stuck fast in the mud, went away soon after three with that common talk of the Midland Counties that the best beast had not made the most money.

SALE OF ROYAL STOCK.—A sale of stock, the property of Her Majesty the Queen, at Prince Consort's Shaw Farm, Windsor, was held under the hammer of Messrs. Buckland & Sons. The stock consisted of 30 very fine prime Shorthorned beasts, in excellent condition, having been fed for Christmas; also 150 Down and half-bred sheep in prime condition, the feeding of which reflected great credit on Mr. Tait, the royal bailiff. There was a large attendance of buyers, and the prices realized exceeded the average amount of the sales at the Royal Flemish Farm, on the 8th of the present month. The sale realized £1,200. The highest price of the beasts was £45 10s., and the lowest £31 15s.; the highest price of the sheep 70s., and the lowest 56s. The average of the beasts was £30 6s., and the sheep 40s. The sale altogether proved exceedingly satisfactory.

LORD DURHAM'S FAT STOCK SALE.—The annual sale of fat cattle at Bowes' House Farm, Lambton, was held last month, by Mr. Thomas Wetherell. The proceeds of the sale amounted to £4,834 8s. 25 half-bred cattle, average £31 10s. 6d.; 16 polled half-bred cattle, £38 10s.; 8 Shorthorns, £33 13s. 9d.; 25 Galloway heifers, £28 7s. 7d.; 7 West Highland heifers, £19 4s. 3d.; 3 Shorthorn cows, £28 5s.; 2 Shorthorn bulls, £30 10s.; 10 lots of half-bred Cheviot wethers, £3 2s. 7d.; 11 lots half-bred Cheviot gimmers, £3 1s.; 7 lots half-bred Southdown wethers, £3 8s. 7d.; 8 lots half-bred Southdown gimmers, £3 1s. 8d.; 5 lots Cheviot wethers, £3 5s. 3d.; 18 lots half-bred Cheviot ewes, £3 2s. 4d.; 22 lots Cheviot ewes, £3 5s. 3d.

SALE OF FAT STOCK AT BLAGDON.—The prime beef and mutton, fed on the Milkhope Home Farm at Blagdon, the country seat of Sir Matthew White Ridley, Bart., was sold. The prices were exceedingly good. The wethers averaged £3 4s. 4d., ewes £2 18s. 0d., Shorthorn bullocks £33 3s. 6d., Shorthorn heifers £34 9s. 6d., polled Galloway cattle £23 11s. 3d. The prices of the half-bred wethers ranged from 58s. to 72s. each, the ewes from 55s. to 60s., Shorthorn bullocks from £27 10s. to £44, Shorthorn heifers from £26 5s. to £50, and polled Galloway cattle from £19 to £36.

HOP MARKET.

BOROUGH, MONDAY, Dec. 27.—Our market continues exceedingly firm, with very little doing, as usual at this period of the season; but in face of the small stock of new home-growths now remaining, there is not the slightest disposition to press sales. The falling-off of arrivals from the continent, and the decreasing imports from New York impart strength to quotations and confidence to holders, giving promise of a better trade after the holidays. Advices from Bavaria and Bohemia remain without change, the market being reported steady. The Belgian markets continue weak. New York letters to the 12th inst. indicate no change in the market, which continues quiet, but firm.

Mid and East Kent	£7 0	.....	£9 15	.....	£12 12
Wealds	6 0	.....	7 0	.....	7 15
Sussex	5 12	.....	6 10	.....	7 0
Bavarians	7 0	.....	9 0	.....	11 0
French	5 0	.....	6 6	.....	7 15
Americans	5 5	.....	6 0	.....	6 10
Yealings	3 0	.....	3 5	.....	5 0

POTATO MARKETS.

SOUTHWARK WATERSIDE.

LONDON, FRIDAY, Dec. 24.—Trade dull, with no alteration in prices.

Yorkshire Regents	70s. to 100s.
Lincolnshire do.	60s. to 85s.
Kent and Essex do.	60s. to 80s.
Dunbar and East Lothian do.	70s. to 100s.
Perth, Forfar, and Fife do.	70s. to 80s.
French and Belgian whites	55s. to 65s.

BOROUGH AND SPITALFIELDS.

LONDON, MONDAY, Dec. 27.—These markets have been fairly supplied with potatoes. Owing to the holidays the trade has been quite of a nominal character. The import into London last week consisted of 517 bags 1,521 packages from Antwerp, 118 sacks Dunkirk, 10 bags Dordt, and 10 bags Rotterdam.

English Shaws	70s. to 80s. per ton.
" Regents	70s. to 100s. "
" Rocks	65s. to 70s. "
Scotch Regents	75s. to 100s. "
French	60s. to 70s. "

COUNTRY POTATO MARKETS, (Friday last).—**DONCASTER:** Our market was poorly supplied with potatoes this morning; holders stood out for high prices, but these are not obtained. Regents continue to make from 9s. to 10s., and rocks from 6s. 6d. to 7s. 6d. per load.—**MALTON:** The potato trade was most retail, at 6d. to 8d. per stone; wholesale prices 7s. 6d. to 8s. per tab. Trade still.—**OTLEY:** Potatoes 8s. per load.—**YORK:** The prices of round potatoes, of which there was an average supply, were from 6s. to 7s. per tab of 280lbs. wholesale, and 5d. per 14lbs. retail.

REVIEW OF THE CORN TRADE DURING THE PAST MONTH.

The close of the year 1869 has been in character with the fluctuations which have marked all its seasons. Beginning with a smart frost, December soon gave place to extensive and damaging floods, especially affecting the Northern, Eastern, Midland, and Western counties; and, though frost again set in as Christmas came, we have yet to learn the extent of injury done to the country flooded. The property lost cannot fail to be immense from the overflow of rivers, and much injury must necessarily accrue to the health and well-being of those whose domiciles have been entered. Many fields will have to be resown, for thousands of acres have only exhibited an expanse of water; and where farmers incur the risk of leaving matters to right themselves, there is so much less prospect of a crop. Notwithstanding the perpetual excessive imports from abroad, prices were previously so much reduced that the turn of late has been upwards, and from the lowest point prices have risen during the month about 2s. per qr. This, though no material help to farmers, seems to indicate that the greatest period of depression has already passed, and should they continue as close-handed with regard to arrivals as they have been of late, in sending to London, the year will probably open with somewhat brighter prospects. Much indeed is yet coming from the Mediterranean and California; but, with the present frost, we may reckon with certainty that the Black Sea, the Baltic, and North America will do but little in the way of export. It is very remarkable, after a deficient crop, that our prices this year should have sunk so much below the rates of 1868, a year of unmistakable abundance; but as stocks in the country diminish, and confidence increases, we may yet see a moderate advance before next harvest, especially as there are general complaints abroad of the present lowness of prices. In Germany, France, Holland, Hungary, and Russia but little reduction has lately been noted; though the accumulation of stores at Odessa amounts to about 700,000 qrs., and at New York to 500,000 qrs. Most of the former will probably find its way here; but not till the frost has broken up in spring can either of these ports be available to any extent. The following prices were recently quoted at the several places named: White wheat, at Paris, 51s., red to 45s. 6d.; best wheat, at Bordeaux, 46s.; red qualities, in Belgium, 46s. to 47s.; white Zealand, at Rotterdam, 56s.; fine qualities, at Porrentruy (Switzerland) 47s.; at Romanshorn, 51s.; new red, at Hambro', 43s. 6d.; best new high mixed, at Danzig, 45s. free on board; red, at Stettin, 42s.; at Rostock, 42s.; choice heavy red, at Pesth, in Hungary, 40s. 6d., inferior 35s.; Saide wheat, at Alexandria, 37s.; red, in the Italian States, 42s. to 46s. per qr.; at Vienna, 43s.; No. 2 spring red, at New York, 36s. 5d. per 480 lbs.; winter and amber qualities 39s.; white, at San Francisco, including cost and freight to Liverpool, 48s. per 500 lbs; wheat, at Adelaide, 5s. 6d. per bushel.

The first Monday, in Mark Lane, commenced on a short supply of English wheat, and a very heavy arrival of foreign, most of which was from various Russian ports. The show of fresh samples on the Essex and Kentish stands during the morning was very limited. The demand for really fine white parcels was improved, and this enabled factors to obtain an advance of 1s. per qr., but inferior sorts were passed over. The extraordinary arrival

from Russia made sales of this sort difficult, and most was ordered to granary, but American, from improved advices, obtained an improvement of 1s. per qr. over the previous Monday's quotations. With limited arrivals of floating cargoes, these were more readily placed at fully as much money. The wheat trade in the country this week showed diversity of opinion. From the better tone at the close of the previous week, several places looked for a 2s. advance, but only a few were able to report it. Others, not so sanguine, noted a rise of 1s., with but a limited trade. Liverpool gave way 1d. per cental on Tuesday, and was dull on Friday. Edinburgh noted a decline of 1s., and Glasgow nearly as much. Foreign qualities at Dublin were dull; but fair-conditioned of home growth, not being plentiful, were fully as dear, and in request.

The second Monday noted a moderate arrival of home grown qualities, and still plenty from abroad; but not so much as the previous week by 25,000 qrs. The morning's show of samples from the near counties was unusually limited, yet millers hung back refusing to buy without some concession on former prices, which in several instances was submitted to, and low rough qualities hung on hand. The large recent arrivals from Russia and America was against the values of these sorts, and they were cheaper on board ship to the extent of 1s. per qr., some holders preferring to make this sacrifice rather than land, especially with such difficulty in procuring good storage. Floating cargoes were fully in sympathy with the general state of the market, and importers were willing to accept 1s. to 2s. per qr. less money. Again a reluctance to accept less money was shown at many country places, as at Boston, Birmingham, Leeds, Oakham, and Stockton, where no concessions were made; but 1s. less was accepted at Salford, Sleaford, Spalding, and Melton Mowbray; while Gainsboro', Lynn, Market-Rasen, Hull, Rotherham, Wolverhampton, and Gloucester were down 1s. to 2s.; but Ipswich, generally forward in rising, noted a reduction of 2s. to 3s. per qr. Edinburgh and Glasgow gave way 1s., and the tendency was downwards at Dublin.

The third Monday brought a small English supply, and there was a very marked falling off in the foreign arrivals, which sank to 13,000 qrs. Again farmers seemed determined to send very scanty supplies to market, there being scarcely anything exhibited from Kent and Essex, and that mostly inferior and in poor condition. This altered state of things influenced millers to be less particular in their purchases, and parcels such as would have been left on the previous week were readily placed at fully as much money, the best being so scarce as to command a little more money. The entire foreign trade also had a more cheerful aspect, while the late depression in American and Russian sorts causing more demand, they recovered value to the extent of 1s. per qr. Cargoes afloat also had less of the previous week's depression. This better report had its influence in the country. Notwithstanding the fact that it was Christmas-week, most places noted more cheerfulness and greater freedom in sales. Several were up 1s., as Boston, Leeds, Manchester, and Newark, and some were 1s. to 2s. dearer, as Sleaford, Louth, and Barnaley. Liverpool noted an improvement of 1d. per cental on the Tuesday's market: Both Edinburgh and Glasgow found a better demand at

rather more money, and the Irish markets were generally firm.

On the fourth Monday there were very small supplies of home-growth, with a fair quantity from abroad. The number of samples exhibited on the Kentish and Essex stands was less than at any previous period since harvest; and this enabled factors, on a very small holiday market, to obtain 1s. advance over the quotations of the previous Monday. The foreign trade, though strictly retail, and in character with the season, was also very firm, and a few sales were made at improved rates. Floating cargoes also slightly revived from the late depression.

The Imports into London for the four weeks were 16,071 qrs. English, 131,066 qrs. foreign, against 23,874 qrs. English, 43,683 qrs. foreign for the same period in 1868. The Imports into the United Kingdom for the four weeks to December 18th were 4,064,205 cwts. Wheat, 521,587 cwts. Flour, against 2,611,285 cwts. Wheat, 339,762 cwts. Flour for the same period in 1868.

The General Averages commenced at 45s. 6d., and closed at 43s. 10d.; those of London began at 45s. 1d., and ended at 45s. 5d. per qr.

The Exports from London in the four weeks were 610 qrs. Wheat, 435 cwts. Flour.

The Flour trade for the most part has been steady. A reduction of 1s. per sack on Norfolk was noted on the second Monday; but since then, with fair arrivals, the tendency has been rather upwards, Norfolk closing at 30s. per sack, and town-made, which has not varied, at 43s. as the top price. In foreign, business has been extremely dull; but rates have kept at about the previous range. The Imports into London for the four weeks were 93,066 sacks country sorts, 7,404 sacks 27,595 barrels foreign, against 86,455 sacks country, 3,812 sacks 27,186 barrels foreign for the same period in 1868.

With but limited arrivals of Maize, the trade has been rather quiet, and prices have kept at about the previous range.

New Beans and hog Peas have of late, by reduced prices, come into competition.

With moderate arrivals of British barley, and increased supplies from abroad, prices have very little altered. The best malting qualities have always been in favour, and being scarce, have commanded fully the previous quotations; but medium sorts have for the most part ruled dull, and grinding still more so; maize and oats being comparatively cheaper. The imports for four weeks were, in British qualities, 12,687 qrs.; in foreign, 45,734 qrs.; against 14,568 qrs. British, 76,900 qrs. foreign, in 1868.

The malt trade has been dull, brewers complaining of a diminished demand, in consequence of so many being out of employment. Prices, therefore, have given way 1s. per qr.; and there seems no prospect of a rally, unless more business should be doing as spring comes on.

The foreign imports of oats have continued very heavy, but, after some fluctuations, they have gained 6d. to 1s. in value during the month. On the first week we had one of the heaviest arrivals known; but as they came on the back of an unusual depression, there was then an improvement of 6d. per qr. This was lost, however, next week, and subsequently rather more than regained. Fine fresh Swedes being now procurable at 19s. per qr., and fair Russian at 18s., there seems little room for any permanent decline; and were it not for the difficulty of obtaining granary room, we think there would soon be some revival, as nothing whatever has lately come from Ireland or Scotland, and the Baltic may soon be closed by frost. The imports for four weeks were 5,671 qrs. English, 297,640 qrs. foreign; against 1,783, qrs. English, 499 qrs. Scotch, 12,198 qrs. Irish, 197,402 qrs. foreign, in 1868.

More new beans have come to market than expected, and prices have therefore given way fully 1s. per qr.; and the demand for old foreign has been slack, from their relatively high value. Still, with a bad crop, there seems but little chance of any reduction, though, quotations being reduced at Alexandria on only small supplies, Alexandrian now are worth about 38s. per qr. The imports into London for four weeks were 8,335 qrs. English, 5,927 qrs. foreign; against 2,481 qrs. English, 15,851 qrs. foreign, for the same period in 1868.

As regard peas, the English supplies have been moderate, but the foreign arrivals liberal. Middling quality boilers, as well as every description of hog-feed, have gone down 2s. per qr.; and old white foreign, for feeding purposes, have been equally reduced; but really fine white boilers, being scarce, have little altered in value, and would still command about 42s. per qr.; while inferior are only worth 36s., duns about 33s., and maples 39s. to 40s. The imports into London for four months were 2,959 qrs. English, 14,050 qrs. foreign; against 2,020 qrs. English, 17,739 qrs. foreign, in 1868.

With fair arrivals of linseed, the trade has continued nominally the same, though, to force sales, prices must have been reduced. Cakes have been moderately in demand, at unaltered rates, and still continue to fetch fair prices.

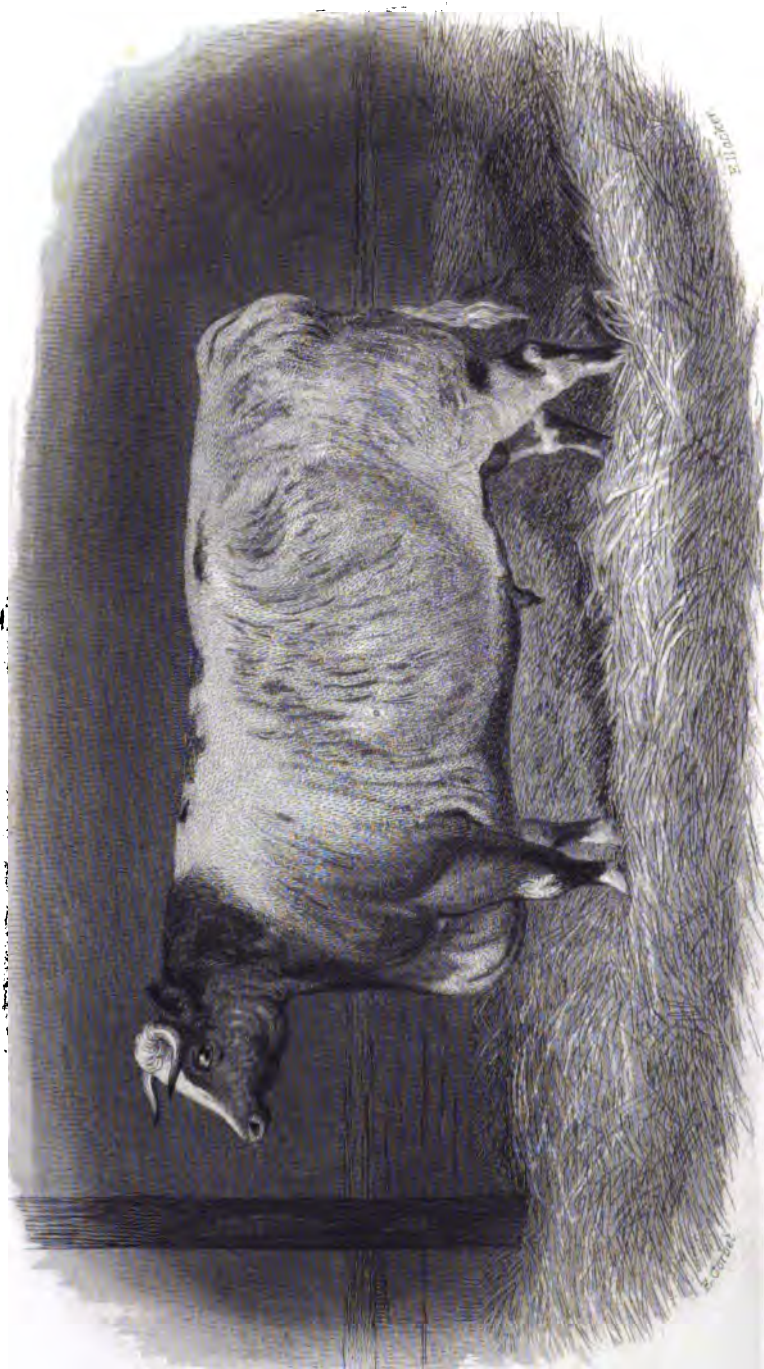
Though we have had a miserable crop of cloverseed in this country, and they are very short in France, prices, which of late were advancing, have been stopped, from the entire absence of speculation, so much money in former seasons having been lost. Rates, however, having recently risen in France, they have kept up well in London; and should only an ordinary demand be experienced, there is probability of an improvement. Trefails remain high, the crop being bad. Tares begin more to be sought at low prices, say to 35s. per qr.

CURRENT PRICES OF BRITISH GRAIN AND FLOUR IN MARK LANE.

	Shillings per Quarter.			
WHEAT, Essex and Kent, white ...	old 47	53	new 40	49
" " " " " "	old 46	46	new 38	45
Norfolk, Lincolnsh. and Yorksh. old 47	49	new 38	45	
BARLEY, " " " " " "	38 to 33	Chewell	new 35	43
Grinding	37	29	Distilling	32
MALT (nominal), Essex, Norfolk, and Suffolk	63			70
Kingston, Ware, and town-made	63			70
Brown	48			55
RYE	31			33
OATS, English, feed 18 to 21	Potato	23		25
Scotch, feed 00	Potato	00		00
Irish, feed, white 16	Fine	19		20
Ditto, black 16	Potato	19		24
BEANS, Masagan 36	38	Ticks	36	38
Harrow 40	43	Pigeon	41	46
PEAS, white, boilers 36	40	Maple 41 to 43	Gray, new 34	35
FLOUR, per sack of 260lbs., Town, Households	37			43
Country, on shore 30 to 33	"			35
Norfolk and Suffolk, on shore	38			29

FOREIGN GRAIN.

	Shillings per Quarter.			
WHEAT, Danisco, mixed 46 to 48	extra	50 to 52		
Königsberg 47	48	extra	46	48
Rostock 43	45	fine	46	47
Silesian, red 40	42	white	43	45
Pomera., Meckberg., and Uckermark. red	43			45
Russian, hard, 39 to 40	St. Petersburg and Riga	40		43
Danish and Holstein, red 41	43	American	43	45
French, none	Rhine and Belgium	00		00
Chilian, white 50	Californian 50	Australian	50	51
BARLEY, grinding 24 to 26	distilling and malting	30		33
OATS, Dutch, brewing and Poland 20 to 24	feed 16			19
Danish and Swedish, feed 18 to 19	Stralsund	18		19
Canada 16 to 17, Riga 17 to 18, Arch. 18 to 19, P'sbg.	20			21
TARES, Spring, per qr.	small 34	36	large	—
BEANS, Friesland and Holstein	38			40
Königsberg 36 to 40	Egyptian	36		38
PEAS, feeding and maple 38	fine boilers	35		39
INDIAN CORN, white 38	yellow	38		29
FLOUR, per sack, French 38	Spanish, p. sack	00		00
American, per brl.	31	extra and 'ble	23	24



*A Shorthorn Steer.
The property of The Earl of Dykeford, of Edington Hall, Wexmouth, and the best-bred
at the Wexmouth and Wexmouth Club, 1859.*

London: Published by Robinson & Taylor, 4, St. Paul's Churchyard, 1859.

PLATE III.

A PRIZE SHORTHORN STEER.

THE PROPERTY OF THE EARL OF AYLESFORD, OF PACKINGTON HALL, COVENTRY.

This steer, bred by Lord Aylesford, and calved on September 22nd, 1864, was by Viceroy (21019) out of Alexandra, by Monarch (20867); her dam Princess, by Botanist (15678)—Victoria, by Remus (15151)—a dairy cow at Packington.

Viceroy, a red-and-white bull, bred by Lord Aylesford, and calved December 8th, 1862, is by Royal Butterfly 5th (18756) out of Blushing Bride, by The Great Mogul (14651); her dam Bride, by Young Lochinvar (13164)—Lady Charlotte, by Bridegroom (11208)—Ladybird, by Lansdowne (9277)—by Sir Robert (7510)—by Charles (1815)—by Staplyton (2698)—by Rob Roy (557).

Alexandra, also bred by Lord Aylesford, a roan cow calved on January 14th, 1864, has, since the birth of this famous steer, produced another roan steer by Second Duke of Cumberland (23735), in September, 1867; a white cow calf, called Juno, by Knight of Gwynne (24278), in December, 1868; and a roan cow calf by Touchstone (20986) in December, 1869.

At the Birmingham and Midland Counties Meeting 1869, this steer took the first prize of £15, with a silver medal for the breeder, as the best Shorthorn steer of his class; an extra prize of £15 as the best Shorthorn bred and fed by the exhibitor; the President's Cup of 25 gs. as the best ox or steer of any breed or age, bred and fed by the exhibitor; £20 as the best ox or steer in the Hall, and 25 gs. as the best of all the animals in the Hall. Judges: W. Sanday, J. Thompson (Badminton), and H. W. Kearsey.

At the Smithfield Club Show in the week following this steer took the first prize of £30 as the best Shorthorn steer not exceeding three years and three months old, with a silver medal for the breeder; a silver cup value £40 as the best steer or ox in any of the classes, and a piece of plate value 100 gs. as the best beast in the show. Judges: W. Sanday, Charles Howard, and Hugh Aylmer.

At Birmingham, on first seeing Lord Aylesford's steer we wrote thus: "Nevertheless, the Birmingham judges declared that they found a superior animal in an older steer of Lord Aylesford's; and a very showy beast this is, with much grandeur, a fine quality coat, a beautiful broad back, and so on. But he is not so thoroughly

true as the other; his head is badly set on, and he is not so well covered about his shoulders. However, all the judges held to the light roan very determinedly, for they made him the best of his class, the best Shorthorn bred and fed by an exhibitor, the best of all the Shorthorns, the best of all the oxen and steers, and the best animal in the yard. At the utmost he is the best of a bad year." Writing on the opening day of the Smithfield Show we said: "A combination of circumstances has told somewhat against the inauguration of the 100 gs. premium. In the first place it was not known soon enough to ensure any especial preparation or demonstration over its award; while the uncertainty engendered by disease floating about has tended to lessen the opportunity or encouragement to 'ripen' any very crack animals. It has thus happened that the first 100 gs. winner is by no means the best beast ever seen at the Smithfield Show. Indeed, our first run through the entries, tends in every way to confirm this impression. Nevertheless, nearly all the champion animals of the year were to be found in the Agricultural Hall; Lord Aylesford's Shorthorn steer, the best of all at Birmingham; Mr. Roland Wood's Shorthorn steer, the best of all at Oakham; Sir Walter Trevelyan's Shorthorn cow, the best of all the cows and heifers at Birmingham; Mr. Outhwaite's Shorthorn ox, the best of all the Shorthorns at Leed; Mr. Bettridge's Hereford, the best of all the beasts at Abingdon, and Mr. Farthing's and Mr. Heath's oxen, the best of the Devon and Hereford breeds at Birmingham. In truth, wherever it well could be, the return-list of the Smithfield Club Show is more an echo of the Midlands' than might have been anticipated; for the Council have so contrived that in every section, save the pigs, the judges in Birmingham are represented in London. Nothing can be more impoit than this, and murmurs grew louder and louder during the morning as the awards still went the same way. Mr. Parrington, at the best managed meeting we have, makes it an indispensable condition that any judge who accepts office at the Yorkshire in August should not have acted at the Royal Society's Show in July; and the Smithfield Club must do the same by Birmingham." Again, during the week we said: "Lord Aylesford's steer, who had worn well, came out still very fresh and blooming. He is certainly an animal of much style, very

good to meet, and with a capital back; but, as we have already said of him, he is not thoroughly true—the more particularly forward. His head, not quite a nice one as he is hog-jawed, is badly set-on, and he is not well-covered about his shoulders. In fact, a much finer specimen of the Shorthorn breed was Mr. Outhwaite's ox, and there was no animal that won so easily in his class. But the judges made every allowance they could for early maturity, and so decided for the younger beast, although he would never promise to grow into so good an ox as the other."

One of the judges, as he is indefinitely put in the Club Report, says: "I think we have seen better champions than Lord Aylesford's ox;" another says, "after once looking through them we had no difficulty in putting Lord Aylesford's steer (19 cwt. 2 qrs. 23 lbs.) first in his class. This is the best steer I have seen for years, so good is he in all his points, meat so evenly laid on,

with quality, form, and hair, and fine handling, in fact, very far superior to any other beast in the yard." The third judge says: "some exception might be taken to the head and horns of Lord Aylesford's ox, but his magnificent baron of beef, with his heavy walk and immense breadth, as he met you, soon claimed for him first honours."

A judge who says "this is the best steer seen for years," would most probably not find even one of his brother judges to agree with him; while the pretty general opinion was that this was not the best beast in the yard; Mr. Outhwaite's ox, and Messrs. Martin's crossed being either of them preferred by many other judges.

The champion steer was purchased by Mr. D. Abbott, of St. John-street Road, Clerkenwell; but although a beast like this, with only a few crosses of pure blood in him, will often feed to a heavier weight than the thorough bred ones, he did not, in trade parlance, "die well."

PLATE IV.

TOPSTALL; A PRIZE HUNTER.

THE PROPERTY OF CAPTAIN BARLOW, OF HASKETON, WOODBRIDGE.

Topstall, bred by the late Mr. Corbett, of Elsham, near Brigg, Lincolnshire, in 1860, is by The Cornerstone, dam by Rocket, grandam by Old Orion, great-grandam by Old Gray—by Old Ruler.

The Cornerstone, bred from Lord Exeter's stud in 1852, is by Cothertstone, out of Valance, by Sultan, her dam Velvet, by Oiseau—Wire, sister the Whalebone, by Wacey. The Cornerstone never ran, and although he is credited with the winner of a hunter stake or two in *The Calendar* his services at the stud have been chiefly confined to country-side mares. We ourselves never saw him but once, and then under somewhat peculiar circumstances. We were acting as one of the judges at a show in the Midlands, where a short class of "stallions for getting hunters" without any other conditions was introduced. Our "Jeared brother," a very hard man over the Shires, took to a coarseish under-bred looking animal as we thought, while we ourselves, for want of a better, fancied a neat, nicely-topped horse, showing plenty of blood, but set-off by a pair of middling forelegs. We were so widely apart that a referee had to be called in, who, without a moment's hesitation, decided in favour of the big brown. This turned out to be the cock-tail British Statesman, while our choice was The Cornerstone, the sire of the prize-hunting horse of his day.

Topstall was sold by Mr. Corbett at five years old with two others for a thousand guineas the lot; and the horse went in turn by means of a London dealer to Mr. Talbot, now Master of the Ledbury Fox-hounds, but who at that time was hunting a pack of harriers on his property in South Wales. Topstall got here the character of a fine flying fencer, but he did not take kindly to the banks in Glamorganshire; while he was considered far too valuable a horse to be risked at such schooling as is required in those parts. Nevertheless, Mr. Talbot, in an exciting finish, rode Topstall into a ruined stone cottage with the roof off, and nothing for it but a standing jump out again of some five feet, when the horse cut his hocks severely by dropping too close to the wall. In 1868 Topstall, with a certificate of being one of the soundest winded horses ever examined, went back to London, and thence into Warwickshire, where Captain Barlow bought him, originally we believe, for Lord Hastings' stud. On

the break-up, however, at Donnington the then Captain took to the bay, nothing loth, and in 1869 Topstall, like Lord Byron, "found himself famous."

Topstall was first shown at Islington, where, in a class of hunters, without conditions as to weight, he took the second prize of £35, being beaten for first by Major Quentin's Placid, with Mr. Sanders' Playmate third, Mr. Drago's Gaylad, and Mr. McIntosh's Baronet highly commended, and Mr. Booth's Bannagh commended. Judges: Lord Combermere, Lord Maclefield, and Captain Percy Williams. We thus wrote of the award at the time: "Topstall has a deal of character, and was by far the most gentlemanly hunting-like horse in the class." But nearly all the judging at Islington was wrong, and a short-legged horse like Topstall did not show so well in the tan.

At the Colchester Meeting of the Essex Agricultural Society, Topstall took the All England premium of £30, beating Mr. McIntosh's St. Clare and others. Judges: Messrs. John Bennett, George Higgins, and R. B. Aylmer. We thus wrote of the award at the time: "Speaking of St. Clare, the first prize weight carrying hunter at the recent Islington show, we said that this horse 'is anything but a good specimen of a hunter; with a good forehead, and walking away well, he is slack in his back, with thin thighs, and weak in his hind legs, as looking altogether as soft as a Shorthorn.' Being the property of a resident in Essex, St. Clare was, of course, shown again at Colchester, where he was thoroughly beaten for the open prize. The horse, indeed, fairly tired and laboured round the ring like the faint-hearted animal he looks: while we are assured that his chief prowess in the field has been confined to carrying his owner a-coursing. The entry against him included three or four of Barker, the Essex dealer's horses, led off by Tom Bowline, the chief prize hunter at Chelmsford last year, but clearly a difficult horse to ride, although a fine strong goer, and admirably piloted by young Barker. With these came amongst others a weight carrier of Mr. Sexton's, Mr. Tharp's game old chamnut, and Captain Barlow's Topstall, who once away from that cockney saw-dust arena only proved his character the more, carrying Mr. George Higgins 'like oil' and of course taking the first prize.



E. H. B. 1870

E. H. B. 1870

Tophurst.
A prize hunter, the property of Messrs. Tophurst & Co., Tophurst, Wiltshire.
London: Published by Rogers & Telford, 24, Strand, 1870.

What after this shall we say of the judgment of the Ilington House of Lords, but what we have said already? and this is, that in some cases, such as the placing of St. Clare, of Whitby, and of the gold medal horse, The Commissioner, the awards of Lords Combermere and Macclesfield, to say nothing of Captain Williams, were as faulty and false as they well could have been."

At the Attleborough meeting of the Norfolk Agricultural Association, Topstall took the first prize of £10 in the middle-weight class, beating Mr. Mott's Michief (second prize), Mr. E. Green's Chester (highly commended), Mr. J. Savory's Tramp (highly commended), Mr. Bett's Arlescott (commended), and others. On the same day he took the Prince of Wales' cup of £20 as the best hunter on the ground, beating Mr. G. Sexton's Idle Box, the first prize horse in the heavy-weight hunter class. Judges: Messrs. Percivall (Wansford), and Hall (Ely). As we wrote at the time, "the award for the best of all was a mere matter of form, as the judges did not take two minutes in deciding in favour of Topstall, who, beyond his good looks, what with his cheerful airy manner, and pleasant style of walking away with you, should be a delightful horse to ride."

At the Ipswich Meeting of the Suffolk Agricultural Society, Topstall took the first prize of £10 in his class, and Lord Rendlesham's cup, as the best weight-carrying hunter, beating again Mr. Sexton's Idle Boy, and others. Judges: E. Green, M.P., and Captain Skipworth.

At the Manchester Meeting of the Royal Agricultural Society of England, Topstall took the first prize of £30 in a class of hunters up to not less than 14st., beating Major Gunter's Wetherby (second prize), Mr. Fyler's Tyrconnel (the reserve), and others. For the special prize of £30 for the best hunter in any of the classes Topstall was placed second, or the reserve, Sir G. Cholmley's chestnuts four-year-old, Don Juan, being pronounced

to be the best of all. Judges: Messrs. W. Smith (Melkington, N.B.), H. Thurnall (Royston), and W. Young (Beverley); but we demurred, as we wrote at the time, to this crowning honour being given to "a weak, cripply-going one like Don Juan in preference to the stylish Topstall, the very type of a modern hunter." Topstall was put in price here for His Royal Highness the Prince of Wales, but the figure was thought to be a little too high.

At the Birmingham Show in Bingley Hall, Topstall took the first prize of £30 in his class, and Mr. Westley Richards' cup as the best hunter in any of the classes, beating Major Stapylton's Sprig of Nobility, Major Quentin's Treasace, Mr. McIntosh's St. Clare, Mr. Berridge's Grafton, Mr. Wart's Thekla, Mr. Westley Richards' Shambally, Mr. W. A. Corbet's Tupaley, Mr. Westley Richards' Ashwell, and others. Judges: Messrs. J. Cookson (Neasham), and J. Topham (Welford).

Topstall is a rich dappled brown gelding, standing just under sixteen hands high. He has a good head, with a very full forehead, and a peculiar dip in the neck at about the junction of the first and second vertebrae. He is rather short in the croup, but has broad hips, and a good back; while he stands short on the leg, with his knees and hocks near the ground. Topstall is altogether a very workmanlike lengthy horse; beautifully framed, and combining power with blood. He has the further recommendation of a sweet temper, and showy, corky action, and we have seldom seen a nag that "took" so much in public.

Major Barlow has long been famous for his prize horses, but he never had such a season as in 1869, when Dalesman and Topstall fairly swept the country; indeed, if the hunting horse had only accompanied the chestnut to the All-Yorkshire show at Beverley the circle of success would have been complete.

DEODORIZERS.

BY CUTHBERT W. JOHNSON, F.R.S.

To the agriculturist; indeed to all classes, the deodorizers perform great and valuable services. Here again we derive the most important instruction from Dame Nature's Book. We had on a recent occasion to remark in this place upon the deodorizing power of earth. The dog buries his bones, the fox his prey, the cat its excreta, the North American savages the stinking skunk, and all with the same object—to keep sweet, or to render sweet, what would otherwise become offensive or pestilential. But on a far mightier scale the Almighty has provided deodorizers, which in the vegetable creation are ever purifying the atmosphere, which the animal world is as incessantly corrupting. And the vegetables by which our very existence is maintained do not confine their deodorizing services to the air we breathe, but they absorb from the soil, and assimilate those noxious products of putrefaction, which might otherwise spread disease and death around our dwellings. And then, again, the atmosphere, which supports the vegetation, which thus absorbs the gases of putrefaction, contains a rather mysterious gaseous substance, ozone, which possesses very considerable deodorizing properties. The air we breathe is, however, speedily exhausted of its ozone in close rooms and in densely populated districts; it is most copiously found in the healthy atmosphere, near the sea and in open upland localities, in lands where the inhabitants are few. A very

easy experiment evinces the different deodorizing power of different atmospheres. If two towels are washed, and then dried, the one by the fire of a close-room, the other in the open air of our garden, how very different in sweetness are found to be the two towels.

We see then that the importance of the deodorizers is not confined to the agriculturist; all classes are deeply indebted to them for their health, nay their very existence. It is true that the cultivator is, in a commercial sense, obliged to the deodorizers, since they store up for him those ammoniacal and other gases, which would otherwise escape from, and so impoverish his decomposing organic manure. It is with this object that the farmer covers his dung-heaps with earth, ploughs such manures into the soil, and spreads powdered gypsum on the floors of his stables.

These things have lately attracted the serious attention of the landowner and the citizen, and their inquiries have already done great service to many a farmer, and still greater things will yet in this way be effected.

The result, indeed, of a more copious supply of water to our towns and the construction of more complete town-drains naturally led to this. As the amount of sewage collected thus became vastly increased, the absolute necessity occurred of providing for the purifying of that great bulk of foul waters. The small quantity of sewage,

which once was hardly noticed as it flowed into an adjoining river, under a system of improved sewerage became intolerable, from the mass of impure liquid which now found its way into the stream. Its water became offensive; the fish were killed; Courts of Equity interfered; injunctions were issued; corporations were obliged to endeavour to purify the sewage before it reached the stream. Many contrivances were soon proposed, schemes appeared in all directions, and, as a general rule, a greater want of knowledge on the subject was evinced than might have been reasonably expected.

It will be instructive if we briefly examine a few of these suggested deodorizers.

The most commonly proposed of the deodorizers of sewage and other impure waters, have been charcoal, lime, and certain salts. In the application of these, very erroneous conclusions are commonly adopted, as was some years since laboriously proved by Professor Way (*Jour. Roy. Ag. Soc.*, vol. xv., p. 185). One leading error is, to conclude that the insoluble or mechanically suspended matters of such impure liquids constitute their chief fertilizing ingredients. Now, Professor Way collected at the mouth of a Croydon sewer, by straining through a flannel bag, a quantity of these matters, and after properly drying them, the following was found to be the chemical composition of 100 parts.

Organic matter	...	...	77.42
Insoluble siliceous matter	...	...	13.49
Oxide of iron	...	...	1.95
Lime	...	...	2.56
Magnesia	...	...	0.69
Phosphoric acid	...	...	2.73
Sulphuric acid	...	...	2.25
Chloride of potassium	...	...	0.63
Common salt	...	...	0.28

100.00

"I consider," added the Professor, "this material as the type of the *best* result that can be obtained by the mere mechanical filtration of sewage, and the preservation of the solid product for manure." These matters we collect in considerable quantities at Croydon, from the straining tanks, through which the town sewage passes on its way to the irrigation meads; but we are unable to sell it for more than about 2s. per load.

As Way observed, there are various forms of charcoal, lime, gypsum, clay, salts of alumina, salts of zinc, iron, and magnesia, that have been proposed as deodorizers. The use of these has been suggested sometimes separately, and in other cases two or three have been associated together. With regard to the employment of charcoal, as he continues, "great misconception exists with regard to its powers. Charcoal is known to have the power of absorbing ammonia and other gases, and that to a very considerable extent; it is therefore taken for granted that this power exists equally under all circumstances; but such is not the case. It absorbs ammonia by virtue principally of its great porosity—by a kind of surface attraction—an attraction possessed by all solids for gases, and having relation, of course, to the quantity of surface; hence charcoal, in common with all porous bodies offering in a given weight a large amount of surface, has a great absorptive power for gases. But this property is also possessed in an eminent degree by water—more especially is this the case where gases largely soluble in water are in question. When therefore we treat charcoal saturated with ammoniacal gas with water, the superior attraction of the water comes into play, and the ammonia is transferred from the charcoal to the solution. In the opposite case, when a solution of ammonia is filtered through charcoal its strength cannot be sensibly diminished."

At Croydon this property of charcoal is taken advantage

of by employing it in the ventilating traps of the sewers, where it well absorbs the gases, which would otherwise escape into the atmosphere; but it is not otherwise used at that town as a deodorizer. In some places, however, it has been employed to a limited extent in the preparation of sewage manure in two ways, which are thus described by the Professor: "In the first place it forms a filtered, through which the sewage is passed; in the second, it is mixed either with the liquid in tanks—the whole being mechanically filtered—or the sewage is first filtered through wire gauze, and the charcoal is added to the pulpy mass to deodorize it and facilitate its drying. But in whatever way it is used, it must be clearly understood that charcoal removes nothing worthy of notice from actual solution."

The next substance which we have to consider as a purifier of impure waters is lime. Way examined its action: "Sewage water filters with great difficulty, and hence it becomes necessary to find some means of causing a ready separation of the liquid and solid. Lime to a considerable extent effects this, and its use has been made the subject of several patents. The lime acts in coagulating the sewage, probably by forming an insoluble soap of lime with the grease of the liquid and by neutralizing the carbonic acid which abounds in fermented sewer water, and which holds in solution carbonate and phosphate of lime, and other salts. A precipitate is thus formed, which encloses in it the light floating organic matter which would not otherwise subside."

The lime process has long been employed on a large scale, at Leicester, where it is known as Wicksted's process; and also at Hastings, where it was introduced by Messrs. Noone. In neither place has the success it has met with been worthy of the energy and skill employed by the inventors. The Leicester process been reported upon by the Queen's commissioners appointed to inquire into the pollution of rivers, to which I shall presently refer. Messrs. Noone's system has been recently described by them (*Engineer* for 1869, p. 414.) nearly in the following words:

They employ a dredger for raising solid matters from the dredger pit, which is in communication with a large underground tank, constructed to receive the whole of the town sewage. A trunk or shoot conveys the solids from the dredger to a covered iron tank, where they are stirred and mixed by means of an agitator.

From the tank the solids pass on over a weir and under a dipping plate into a second tank, called the ammonia tank, where they are mixed with milk of lime from a lime tank, and are further stirred and amalgamated by an agitator. The ammoniacal gas liberated by the lime passes over into an earthenware condenser containing hydrochloric acid, and is there fixed.

From the ammonia tank the solid matters pass on in a semi-fluid state to an endless wire cloth, travelling nearly horizontally on rollers in a chamber. The wire cloth strains off the water from the solids, and carries them into the drying chamber, which is made with three circular troughs or channels one above another. The solids are received in a pasty state in the upper trough, and are kept travelling in it by means of revolving scrapers.

When the solids have passed round the upper trough they fall through an aperture into the second trough, where they are carried round by similar scrapers, and then fall into the lower trough, where they are treated in the same manner, and are finally delivered in a partially dried state. The chamber is heated by flues passing under each of the circular troughs from the furnace door.

The lime tank has an agitator, and the milk of lime is conveyed into the ammonia tank by a pipe.

The ammonia tank is sealed by a dipping plate at the

opening, which allows the solids to pass on to the wire cloth and prevents the escape of gases. When the hydrochloric acid in the condenser is sufficiently neutralized and saturated with ammonia, a portion of it is drawn off from the condenser to the evaporating pans, where the acid being driven off by heat, the ammonia is recovered in the form of sal ammoniac.

The works are not now in operation, the machine as erected having been found too large for the town of Hastings.

The chemical composition of the solid manure, prepared by a lime process (with probably charcoal), was examined by Way. He found in 100 parts;

Moisture	...	...	...	...	4.39
Charcoal and organic matter	...	...	...	...	36.58
Sand, &c.	...	...	...	...	9.88
Oxide of iron and alumina	...	...	...	...	1.84
Phosphate of lime...	...	...	...	...	5.51
Carbonate of lime, with a little carb. of magnesia	...	...	...	...	32.92
Sulphate of lime	...	...	...	...	8.18
Alkaline sulphates and chlorides...	...	...	...	...	0.78

100.00

When only lime is added to the sewage the amount of carbonate of lime in the manure precipitated is much larger than in the foregoing analysis. Way calculated that the excrements of each person in London are mixed with 20 gallons of water; and as when the sewage is precipitated by lime each gallon of water furnishes 80 grains of chalk, we have 600 grains of chalk as the quantity which is added to 437 grains of solid excrement; so that the manure produced would on this showing contain nearly 60 per cent. of carbonate of lime. This is a startling fact, and one, adds the Professor, well worthy of the attention of those who are advocating the process.

The Professor also analysed a manure made from London sewage by precipitated sulphate of alumina, lime, and charcoal. He found in it per cent. (*Jour. Roy. Ag. Soc.*, vol. 15., p. 161):

Moisture	...	...	...	36.20
Organic matter, charcoal, &c.	...	...	...	19.65
Sand, &c.	...	...	...	10.47
Oxide of iron and alumina	...	...	...	4.31
Phosphate of lime	...	...	...	2.63
Sulphate of lime	...	...	...	5.89
Carbonate of lime	...	...	...	20.35
Alkaline sulphates and muriates	...	...	...	0.50

100.00

In the report of "the Rivers Pollution Commissioners" they contrast the results obtained at Leicester by treating sewage by the lime process with that by Mr. Sillar's invention, this last being known as the A. B. C. process, so named from the initial letters of the principal re-agents employed, viz., alum, blood, bones, clay, and charcoal.

There are other substances, however, employed by Mr. Sillar than those I have mentioned. I find from an obliging communication from Mr. Baldwin Latham, the engineer to the Croydon Board of Health, that the following are the ingredients and proportions in the mixture used in the patent A. B. C. process:

	Parts.
Alum	600
Blood	1
Clay	1,900
Magnesia	5
Manganate of potash	10
Burnt clay	25
Common salt	10
Animal charcoal...	15
Vegetable charcoal	20
Magnesian limestone	2

As the commissioners remark in their report the purification of sewage may be conveniently considered under

two heads—1st, clarification, or the removal of suspended matters, so as to render the resulting liquid more or less clear and transparent; and, 2ndly, the removal of matters in solution. The suspended matters contained in sewage are well known to undergo rapid putrefaction, and to become very offensive, consequently their removal, either by filtration or by chemical treatment, constitutes in itself an important amelioration in sewage. But the liquid so clarified contains in solution much nitrogenous organic matter, which is prone to become putrid even mixed with a considerable volume of river water. In regard to clarification, the report informs us the experiments at Leicester scarcely establish a decided superiority for Mr. Sillar's process over the method of treatment by lime. On the first day the effluent liquids were nearly equally clear; on the second day the limed sewage was markedly superior to its rival; whilst on the third day the sewage treated by the new process was much clearer than the limed liquid. The suspended matter in 100,000lbs. of this effluent sewage was as follows:

	After Lime Process.	After Sillar's.
	lbs.	lbs.
1st day	6.00	6.12
2nd "	2.84	4.36
3rd "	6.56	2.76

Of the soluble constituents of sewage the following table gives the total solid impurity removed or added to the sewage by the lime or Sillar process. The numbers, as usual, refer to 100,000lbs. of sewage:

Lime Process.	Removed.	Added.
	lbs.	lbs.
1st day	23	—
2nd "	22	—
3rd "	11	—
Sillar's Process.		
1st day	—	6
2nd "	—	13
3rd "	—	11

The numbers show that whilst the lime process considerably reduces the amount of dissolved impurities in sewage, Sillar's process markedly augments it. The explanation is obvious: in the lime process, which is in fact an application of the late Professor Clarke's ingenious method of softening water, all the material added in solution is again precipitated in the solid form; but in Sillar's process considerable quantities of dissolved chemicals are added which are not afterwards precipitated.

The material, however, which it is of the greatest importance to remove from the dissolved constituents of sewage, is nitrogenous organic matter, because it is chiefly this kind of organic matter which enters rapidly into putrefaction, and becomes an active agent in polluting rivers. It is precisely here that both processes signally fail (although the lime is slightly superior to the new process) in accomplishing such an amount of purification as would render the sewage admissible into an open water course. The composition of the manure obtained by both processes was ascertained by careful analysis. The following results in per centage numbers were obtained. The dried mud of the two processes was composed of—

	The Sillar.	The Lime.
Mineral matters	54.772	37.413
Organic and other volatile matters	45.228	62.587
Carbon	24.994	18.865
Phosphoric acid	.496	.147
Total nitrogen	1.945	.549
Ammonia	.185	.090

It is thus evident, continues the commissioners, that in the three valuable constituents of manure, viz., in ammonia, in other forms of combined nitrogen, and in phosphoric acid, the manure obtained by the new process is

greatly superior to that resulting from the treatment with lime. Unfortunately some doubt is thrown upon the source of the increased amount of phosphoric acid present in the manure obtained by the new process, because bone-black, in (to us) unknown quantity enters into the composition of the precipitating material used by Mr. Sillar, and thus an uncertain amount of phosphoric acid is added to that which is actually derived from the sewage.

The commissioners estimate the value per ton of the two manures to be as follows:—

				£	s.	d.
From the lime process	...	...	...	0	13	6½
" Sillar's	...	...	...	1	13	0½

Such is the value of these deposits as estimated from chemical analysis; but experience has warned the manufacturer of these feeble manures that the value indicated by chemical analysis cannot be counted upon in the market. Thus, the Leicester mud is actually sold for 1s. per ton., although its indicated value is 18s. 6½d.

The commissioners (Messrs. W. Denison, E. Frankland, and J. C. Morton), at the conclusion of their valuable report, thus summarise the results of their experiments: 1. That Sillar's and the lime processes remove to a great and nearly equal extent the suspended matters contained in sewage. 2. That Sillar's process increases the amount of dissolved solid impurity in sewage, but reduces the quantity of putrescible organic matter. The

lime process reduces both the amount of dissolved solid impurity and the quantity of putrescible organic matter; the reduction of the last being about the same as that effected by Sillar's process, viz., rather more than one-half. 3. Like all chemical modes hitherto invented, both processes fail in purifying sewage to such an extent as to render it admissible into running water. It still remains a fact, that no chemical process is known which even remotely approaches irrigation in its efficiency as a purifier of sewage. 4. For the manufacture of solid manure from sewage, Sillar's process is greatly superior to the method of treatment by lime, although it fails to extract from the liquid more than a very small fraction of its valuable contents.

From the result of these laborious investigations, the reader will form a fair opinion of the action of the chief deodorizers hitherto rendered available. I have on a previous occasion enlarged upon the use of earth in composts, and in this paper I have avoided remarking upon several valuable preparations which have on a limited scale been employed, such as carbolic acid, chloride of lime, nitrous acid gas, &c., &c., since these have never been used to the large extent to which deodorizers are required in the operations of my readers. The question is of very great and increasing importance, for it relates not only to the saving of great amounts of hitherto waste than wasted fertilizing matters, but also to the increased health and duration of life of our fellow creatures.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

The general meeting of the Highland and Agricultural Society was held in the Society's Hall, George IV. Bridge, the Marquis of Tweeddale, K.T., president, in the chair. The following noblemen and gentlemen were proposed as office-bearers for 1870:

PRESIDENT.—Most Noble the Marquis of Tweeddale, K.T.
VICE-PRESIDENTS.—Right Hon. the Earl of Dalkeith, Right Hon. R. C. Nisbet Hamilton, Right Hon. the Earl of Selkirk, Right Hon. the Earl of Stair.

EXTRAORDINARY DIRECTORS.—Sir William Baillie, of Polkemmet, Bart.; Sir Alex. C. B. Gibson-Maitland, of Barnton, Bart., M.P.; Robert Dundas, of Arniston; Peter M'Lagan, of Pumpherston, M.P.; John Stirling, of Kippendavie; Sir William Jardine, of Applegarth, Bart.; Sir Thomas Buchan Hepburn, of Smeaton, Bart.; Robert Vane Agnew, of Barnbarroch; Patrick Dudgeon, of Cargen; Wellwood H. Maxwell, of Manches, M.P.

ORDINARY DIRECTORS.—Graham Somervell, of Sorn; Graham Binny, W.S., Edinburgh; Colonel Archibald Campbell, of Blythwood; Colonel James Dundas, of Carron Hall; Robert Elliot, Leithwood, Dunkeld; James Geddes, Orbliston, Fochabers; John Ord, of Muirhouselaw; Major John Ramey, of Barra; Robert Russell, Pitmuir, Leven; Sir James Gardiner Baird, of Saughton Hall, Bart.; Hew Crichton, S.S.C., Edinburgh; Charles Lawson, of Borthwick Hall; Alexander Mc'Donag, Granton Mains, Edinburgh; Thomas Mylne, Niddrie Mains, Liberton; Thomas Coutts Trotter, Champfleurie, Linlithgow; John Wilson, Edington Mains, Chirnside; Sir George Warrender, of Lochend, Bart.; Robert Binnie, Seton Mains, Longniddry; John Dickson, of Corstorphine; Thomas A. Hog, of Newliston; James Evan Newton, Lynbank House, Lanark; John Wilson, Professor of Agriculture, University of Edinburgh; Alexander Young, Keir Mains, Dunblane; Sir Archibald Hope, of Pinkie, Bart.; Adam Curror, The Lee, Edinburgh; Capt Maitland Dougall, of Scotsraig, R.N.; Wm. Ford, Hardengreen, Dalkeith; Andrew Mitchell, Alloa; Capt Tod, of Howden; James Seton Wightman, of Courance.

OFFICE-BEARERS.—The Right Hon. Sir William Gibson-Craig, of Riccarton, Bart., treasurer; Sir William Stirling Maxwell, of Follos, Bart., honorary secretary; Elishah

Norton Menzies, secretary; Rev. James Grant, D.C.L., D.D., chaplain; Thomas Anderson, M.B., Professor of Chemistry, University of Glasgow, chemist; Kenneth Mackenzie, C.A., auditor; John Wilson, Professor of Agriculture, University of Edinburgh, professor of agriculture; W. J. Macquorn Rankine, LL.D., Professor of Civil Engineering, University of Glasgow, consulting engineer; Alexander Slight, practical engineer; Gourlay Steell, R.S.A., animal portrait painter; William Williams, professor of veterinary surgery; William Edwin Duns, professor of cattle pathology; Thomas Duncan, clerk; John MacDiarmid, junior clerk; William Blackwood and Sons, publishers; Neill and Company, printers; Mackay, Cunningham, and Co., silversmiths; Alexander Kirkwood and Son, medallists; John Watherston and Sons, inspectors of works; William McNeill, messenger.

CHAIRMEN OF STANDING COMMITTEES.—Argyll Naval Fund, Admiral Sir William J. Hope Johnstone, K.C.C. Chemistry, Professor Anderson. Cottages, Harry Maxwell Inglis, of Logan Bank. District Shows, A. Campbell Swinton, of Kimmerghame. Finance, Anthony Murray, of Dolerie. General Shows, Alexander Kinloch, jr., of Gilmerton. Hall and Chambers, John Ord Mackenzie, of Dalphingston. Law, Graham Binny, W.S. Machinery, John Gibson, Woomat. Monthly Meetings, Sir Thomas Buchan Hepburn, Bart. Premiums for Reports on the Science and Practice of Agriculture, William S. Walker, of Bowland. Premiums for Reports on Woods and Forests, Professor Balfour. Publications, Alexander Forbes Irvine, of Drum. Veterinary Department, Andrew Gillon, of Wallhouse.

Mr. GEORGE HARVEY (Whittingham Mains) remarked on the great preponderance of Mid-Lothian farmers who had got into the list of directors. He thought they had only got one farmer on the frontier of East-Lothian, while there were five farmers from Mid-Lothian; and he wanted to know if there was any good reason to be assigned for that. The latter were all honourable men—he found no fault with them; and he hoped that they were all honourable men. These directors had privileges; they went down to the annual shows; a large hotel was taken to accommodate them; they got free beds and had free access to all that was going on. That was not a great thing; still, if it was a privilege, he thought the farmers

in East Lothian should get a share. It was not a case of "sour plums" on his part, for he had already been a member of the board of directors, when the Society was in a critical position, and he had no desire to be in it again. But holding the position he did of treasurer and convener of the East Lothian Society, he thought he was entitled to speak up on behalf of that county. He did not make a motion proposing any alteration of the list; but he thought it was a matter which he considered to be deserving of attention.

The list was accordingly agreed to.

The Duke of Buccleuch proposed that Miss Burdett Coutts be elected a lady member of the Society, and the motion was carried with acclamation.

Mr. FLETCHER N. MENZIES, the Secretary, read the following list of 89 new applications for admission to the membership, all of whom were elected.

Hamilton, The Hon. Robert Baillie, Langton, Dunee
Forrest, Sir John, of Comiston, Bart., Mid-Lothian
Alexander, James, Balmule, Dunfermline
Allan, William, Drummondrieoch, Ferintosh
Anderson, William, Rainbow Hotel, Edinburgh
Ballingal, Andrew H., W.S., Perth
Boag, Thomas Elliot, Lanton, Jedburgh
Bryan, Fred. George Daniel, factor, Drumpeller, Coatsbridge
Burgess, E. C., Dalrig, New Cumnock
Carruthers, John, Tundergarth, Lockerbie
Clephorn, Hugh, M.D., F.R.S.E., Stravithy, St. Andrews
Coghill, David, treasurer, Hutchesontown Gardens, Glasgow
Coghill, George, secretary, Hutchesontown Gardens, Glasgow
Cove, Robert, Oldcastles, Chirnside
Craig, Daniel, Barr, Sanquhar
Crosarty, William, Widewall, Orkney
Dalziel, George, Auchengruth, Sanquhar
Davidson, Gilbert, banker, Hawick
Davidson, Hugh, procurator-fiscal, Lanark
Dickson, Alexander, Hartree and Kilbucko, M.D., Professor of Botany, University of Glasgow
Drev, James, Craigenacilla, Wigtownshire
Drummond, W. P., seedsmen, 55, George Street, Edinburgh
Dugdon, Alexander, East Dalmeny, South Queensferry
Dunlop, Alexander Murray, jr., Corsock, Dalbeattie
Ferguson, John, seed and manure merchant, Sanquhar
Ferguson, William, Kinnmaddy, Mintlaw
Fletcher, Major Joseph, Kelton House, Dumfries
Gardner, John, 73, Abbotsford Place, Glasgow
Gibbons, John, cattle salesman, Liverpool
Greig, James Alexander, Terregiestown, Dumfries
Halkett, David, banker, Alyth
Haley, John, Dornoch, Crieff
Harkness, Christopher, Provost of Dumfries
Hay, Alexander, Easter Culmalundie, Perth
Hutchison, Thomas, Greenend, Liberton
Hyslop, John, Bank House, New Cumnock
Iaeh, Thomas, Gilkeracleuch, Abington
Ingram, Alexander, Challoch, Stranraer
Kennedy, William, Kirkland, Sanquhar
Kerr, Joseph, Flatts of Cargen, Dumfries
Lyon, Thomas Arthur, Foxwood, Dumfriesshire
McAdam, James Nicol, Woodfield, Banochry
McClew, John, Diavin, Portpatrick
McCulloch, David, bank agent, North Berwick
McGowan, William, Bleggie, Upper Keith
Macgregor, Donald, Royal Hotel, Edinburgh.
McHaffie, William James, Torhousemuir, Wigtown
McKean, Andrew, Airlies, Wigtown
MacLaine, Murdoch, Lochbuey, Oban
McNaughton, Daniel (McLean and Hope), Leith
Macpherson, Major Lachlan, Glentram, Kingussie
Macquene, James, Crofta, Dalbeattie
Main, George Agnew, banker, Whithorn
Marwell, John Heron, jr., Springkell, Ecclefechan
Menzies, William John, W.S., Edinburgh
Merrieks, H. J., Gunpowder Mills, Roalin
Merrieks, J. L., Gunpowder Mills, Roalin
Merrieks, William, Gunpowder Mills, Roalin
Miller, William, Niddry Main, Winchburgh
Millie, George, Kilmarnock, Cupar-Fife
Minto, John D., Kelton, Dumfries
Mundell, Walter Grieve, Inverland, Lochbroom, Dingwall

Mure, William, 12, Ainslie-place, Edinburgh
Ogilvy, Colonel, Rannagulation, Blairgowrie
Porteous, John, Whim, West Linton
Fullar, John, Lord Provost of Perth
Ralston, A. R., Warrick Hill, Kilmarnock
Robertson, Peter, Ettridgie, Kingussie
Robertson, William A., Abbotshill, Dalvey, Forres
Routledge, William, Edrig, Port William, Wigtownshire
Ryrie, Robt., 34, Park-street, Grosvenor-square, London
Scott, John, Clebrig, Lairg
Sim, Henry, Ardullie, Evanton
Sloan, John, Barnhill, Patna, Ayrshire
Small, John Lumsden, Foodie, Cupar, Fife
Stark, Robert, Kirkcaldy
Steel, Gavin, Carfin, Crossford, Lanark
Stewart, Donald, Biallid, Kingussie
Teehan, Michael, Lochside, Terregles, Dumfries
Thomas, Robert, Noranside, Forfar
Thompson, William, Ryle, Alnwick
Tod, John Wharton, W.S., 66, Queen-street, Edinburgh
Tod, Thomas M., Findaty, Kinross
Walker, Alexander, Stage-bank, Heriot, Gorebridge
Weston, Major, Golepie
Whyte, Archibald, Cotton, Alyth
Wilson, Robert, linseed crusher, Dundee
Younger, Henry J., Bilston Lodge, Loanhead.

The gentlemen in the above list were unanimously admitted.

Mr. KENNETH MACKENZIE, C.A., laid on the table the abstract of the accounts of the society for the year 1868-9. The total income for the year, including £5,980 19s. 10d. from receipts at Edinburgh Show, 1869, and £1,500 reinvested, and £767 12s. 2d. of a balance due by Royal Bank of Scotland at 30th Nov., 1868, was £12,073 13s. 1d.; and the expenditure, including £2,319 6s. 5d. as general expenses of the Edinburgh Show, was £7,322 3s. 6d.; leaving a balance of £4,851 10s. 7d., of which £4,050 has been invested on Debenture Bonds. There are medals on hand of the value of £10 6s. 6d.; arrears of subscriptions, considered recoverable, £58 10s.; and a balance in the Royal Bank of £732 14s. 1d.

Admiral Sir W. HOPE JOHNSTONE gave in the abstract of the accounts of the Argyll Naval Fund for the year 1868-9. The following was the charge: Balance in Royal Bank of Scotland at 30th Nov., 1868, £280 17s. 4d.; interest on £3,000 heritable security, £117 6s. 1d.; interest on £2,300 Debenture Bonds, £94 5s. 11d.; progressive interest on bank account, £2 0s. 10d. The expenditure consisted of allowances to five recipients to the amount of £200, and there is a balance in bank of £274 10s. 2d. He stated that there was no difference in the young officers since last year. The accounts were certified by Mr Murray, the chairman of the Finance Committee; Mr Trotter, a member of the Finance Committee; and Mr. Kenneth Mackenzie, the auditor; and he need only say that he regretted none of these young officers had got a step of promotion during the last year; because, if they had, they would have made way for some other Argyllshire youths to be brought forward and trained in such a way as that they might become good and gallant officers in the navy. In the sister service of the army, Scotland had produced many eminent officers. In the year 1809, he might call to the recollection of the meeting, this very month, the three senior general officers who commanded at the battle of Corunna were all Scotchmen—Sir John Moore, Sir David Baird, and Sir John Hope. Many other eminent men had been produced by Scotland to swell the list of general officers, of whom he might mention Abercromby and Sir Colin Campbell. In the navy Scotland had also produced many officers who fought gallantly. Admiral Duncan and Lord Cochrane were well known for their deeds of bravery many years ago; and he looked forward to the young officers receiving from this fund, having Highland blood in their veins, taking a high place in their profession.

The report was adopted.

The SECRETARY read the following report in regard to the Dumfries show, which has been arranged to take place on the 26th, 27th, 28th, and 29th July next: "The district connected with the show comprises, as on former occasions, Dumfriesshire, the Stewartry of Kirkcudbright, and Wigtownshire. The counties have all agreed to a voluntary assessment according to rental in aid of the auxiliary fund, and the town council of Dumfries have subscribed £50 towards the same object.

The premiums offered amount to about £1,500, irrespective of what may be awarded for implements and for the first prize animals at former shows of the society. The classes of stock have been for some time before the public, and the list with the premiums and regulations will be immediately published. Instead of the judging beginning at nine o'clock on Wednesday morning, it will commence at one o'clock on Tuesday, and the yard will be opened on Wednesday, Thursday, and Friday, as well as during the judging on the afternoon of Tuesday. The directors have named Mr. Maxwell of Munches, M.P., convener of the local committee. That committee will be named at the respective county meetings on the 30th of April."

The report was adopted.

The SECRETARY read the following report of the committee in regard to the proposal for holding the society's show at Perth in 1871: "A requisition was received for a show being held at Perth in 1871, for a district comprising the eastern division of Perthshire, western division of Forfarshire, Fifeshire, and Kinross-shire. The requisition was favourably entertained by the directors, who remitted to the Committee on General Shows to suggest the classes of stock for which premiums should be afterwards offered. This list was submitted to a meeting of members held at Perth, and it is for this meeting to give its formal sanction to the show being held at Perth in 1871. The last meeting there was held in 1861, and, according to the usual rotation, the show falls to be held at Perth in the year mentioned in the requisition."

It was resolved that the meeting approve of the show being held at Perth in 1871, and that the directors be empowered to make the necessary arrangements.

Mr. DUDGEON (Gargen) submitted to the meeting the report of the district competitions held during 1869. Premiums had been awarded in money to the amount of £364; beside four medium gold, 21 large silver, 151 medium silver, 25 cottage, and 180 plough medals, independent of the vote of £50 to the Edinburgh Christmas Club, and the grant of medium silver medals to the Forres and Northern, and the Northern Counties fat show clubs, making the total amount expended on this branch of the society's operations during the past year £676 14s. 6d. in above 270 districts of Scotland. The money premiums were paid and all the medals issued on the 30th December last.

Mr. DUDGEON further stated that the committee, finding that many of the larger prizes go year after year to the same individuals, have resolved, with the view of increasing competition, that there should be a greater number of premiums, and it is proposed in future that there should be in cattle ten prizes in place of six; in mares, three in place of one; in colts and fillies, twelve in place of four; in sheep, thirteen in place of five; in swine, seven in place of five; and in dairy produce, eight in place of six. Some modification in the amounts offered have been rendered necessary, but as it has enabled the directors to place a greater number of districts on the list, it is hoped the arrangements will meet with the approval of the present meeting. In the cottage and garden section it is proposed that the society should pay the whole prizes, and limit the competition to five consecutive years in each parish. The number of districts the directors suggest for 1870 are—eight for cattle at £17, and four silver medals each; three for stallions at £25 each; one for brood mares at £7, and silver medal; one for colts at £8, and two silver medals; five for sheep at £16, and five silver medals; one for swine at £7, and three silver medals; one for dairy produce at £6, and four silver medals. Another district (viz., Kilmarnock), four medium gold and eight silver medals for cheese and butter. As the committee felt itself unable to meet all the demands for money premiums, they have been as liberal as possible with the offer of silver medals, and it is a matter of much gratification to the directors to report that every application for assistance has been complied with in one shape or another. The premium book for 1870 is in course of publication, and it will be found that there are 79 districts down for no fewer than 215 medium silver medals in aid of premiums given by local societies. The meeting is aware that the plough medal is given without previous application on a certificate by a member of the Society who has attended the match, provided the report is lodged within one month of the competition, and premiums to the amount of £3, awarded by a local society or ploughing association, the name of which must

be registered with the Highland Society. Form of the report, containing the regulations, can be obtained on application to the secretary. In the department for cottages and gardens there are twenty parishes on the list, and £3 in money and four silver medals are offered to each. Besides the premiums now reported on, the Society offers the gold medal to the proprietor who shall report the improvement of the greatest number of cottages in years 1867, 1868, and 1869; and the gold medal to the proprietor who shall report the erection of the greatest number of approved cottages during the same years. The gold medal is also offered to the proprietor who shall have erected on his estate the most approved farm dwellings in reference to the proper accommodation of farm servants. There are certain conditions attached to these premiums, copies of which will be furnished on application at the Society's chambers. Before sitting down, Mr. Dudgeon stated that it was proposed to renew the grant of £50 to the Edinburgh Christmas Club; and he asked the meeting to sanction the different premiums now suggested for 1870.

The reports were approved of.

Sir WILLIAM STIRLING-MAXWELL reported as follows: The show which was held in Edinburgh in July last was one of the most satisfactory ever held under the auspices of the Society, and in a pecuniary point of view it had been successful beyond anticipation. When the Society held its meetings in Edinburgh in 1869 the surplus on the show amounted to £74 6s. 5d. On last occasion, as has already been stated, the probable surplus will not be less than £2,067. This sum might have been somewhat larger, but the directors, in consideration of the great success of the meeting, resolved to vote a silver medal to all commended implements and animals except poultry. The due for this medal was in course of being prepared, and would bear the Society's arms. As the meeting was aware, the Society is much indebted to its noble president and various other members, and the directors had requested him to move the following resolutions of thanks: 1. "That the thanks of the Society be given to the Most Noble the Marquis of Tweeddale, K.T., president of the Society, for his attendance at the Edinburgh show, and for the warm interest evinced by his lordship in promoting the objects of the meeting." 2. "That the thanks of the Society be given to his Grace the Duke of Buccleuch and Queensberry, K.G., for officiating (in the unavoidable absence of the President) as chairman at the public dinner, and for his Grace's personal exertions and support on the occasion of the Edinburgh Show." 3. "That the thanks of the Society be given to William Chambers, Esq., late Lord Provost of the city of Edinburgh, for the special interest he manifested in the success of the Edinburgh Show, for attending officially along with the magistrates on the opening day of the Show." 4. "That the thanks of the Society be given to the magistrates of the city of Edinburgh for their liberal subscription towards the Premium Fund of the Edinburgh Show, for allowing the meadows to be used for the purposes of the showyard; for the very efficient services of the police; and for the assistance rendered by the city authorities in carrying out the various arrangements of the meeting." 5. "That the thanks of the Society be given to the Commissioners of Supply for the counties of Edinburgh, Haddington, and Linlithgow, for the liberality with which the auxiliary fund of the Edinburgh Show was provided." 6. "That the thanks of the Society be given to Robert Dundas, Esq., of Ardstoun, who discharged so satisfactorily the duties of convener, and to the other members of the committee of superintendence for their zealous exertions in the duties devolving upon them at the Edinburgh Show. Sir William Stirling-Maxwell went on to say—I believe that I need not enforce the resolutions by any lengthened remarks; but I think it will be a pleasure to the members of the Society here present to congratulate our noble President on having been able to attend at our last show, and also to be present here to receive the thanks now moved to him, and to others, on whose zealous and efficient services so much of the success of the Show depended.

The report and resolution were agreed to.

The CHAIRMAN said; The next subject to be taken up is the report of the Committee on Steam Cultivation. Although we have been long in giving in the report, we have taken as much pains as we could to master the subject. The report will appear in due time in the Transactions of the Society. I must say this, that the committee were confined to a particular district to get the necessary information, and I am sorry to say

that we have not received that amount of information which would enable us to make so full a report as we could have desired. We think that much more information would be required before it could be said that steam cultivation will be as suitable for Scotland as it is for England. We must remember that in the countries where steam cultivation is general the soil is quite of a different nature from what it is in this country. In England the soil is mostly alluvial, whereas in this country the soil that has been brought down by currents of water from the hills into the low grounds is mixed with stones, and the expense of cultivating it is, I believe, so much increased in consequence of that. You have got an excellent report by Mr. Hope, Fentonbarns, on steam-ploughing; and I hope that in the course of a short time we shall be able to give you more information on this important subject than we can at present.

The SECRETARY then read the following conclusions, to which the committee had arrived on the subject:—

"1st. The committee observe that cultivation by steam-power is much more common in England than in Scotland. It cannot be said that the farmers of Scotland do not possess practical knowledge, skill, and economy in the management of the land, and yet they seem to adhere to ploughing the land with horses, which the committee, however, believe as a rule, much better done in Scotland than in England.

"2nd. The committee are of opinion that before a steam plough can be advantageously employed, the land should be thoroughly cleared of all large stones and other impediments to the free action of the plough, and that this can be most effectually done by having the land previously ploughed by horses to the depth of 14 inches, in the same manner as the committee saw done at Yester by the Marquis of Tweeddale.

"3rd. The committee are farther of opinion that where deep cultivation is desired (that is, not less than from 12 to 14 inches) the double engine system of Fowler appears to be best suited, as the action of the engine is more direct, and a much less extent of rope is required. Deep cultivation must, however, entail a great strain on the implements, and a consequently increased risk of breakage.

"4th. Where a shallow furrow (that is, not exceeding 8 inches on ordinary soil) is all that is required, the single engine and moveable anchor system of Fowler, or the roundabout system of Howard, but with Fowler's balance plough, seem well adapted. Fowler's system requiring a shorter rope and fewer hands to work it, but necessitating the plough to work at right angles, or nearly so, to the engine, is therefore not well suited for uneven-sided fields. Howard's system, from the engine remaining stationary, does away with the strain on the engine moving along the soft headland, and the consequent poaching and compressing of the soil, but requiring two additional men to work it, and a large extent of rope. It is also better adapted for fields of an irregular shape, as the plough with the moveable snatch-blocks and anchors will work in any position.

"5th. The committee are also of opinion that on a large farm having a comparatively flat surface, with fields of not less than twenty acres, as nearly square as possible, and free from stones or other obstacles, and where three or four pairs of horses can be dispensed with, that steam cultivation will probably be highly beneficial as an auxiliary to horse power, as the work can be done with greater celerity and the ground cropped at the proper time, whereby an increased return would be likely to ensue. On a smaller extent of land there does not seem to be sufficient scope for the profitable employment of a steam plough.

"6th. The committee consider that further experience of steam cultivation in Scotland is necessary, in order to ascertain the actual expense of it, and the endurance of the engines and apparatus. On all the farms which they have inspected the machinery is comparatively new, and it is not to be expected that much outlay should be required to keep it in good order."

The Hon. GEORGE WALDEGRAVE LESLIE asked whether the committee was to be continued? Since last year an important improvement had been made in connection with double-furrow ploughs. If he mistook not, when the Thomson india-rubber tire-wheeled engine was put before these double-furrow ploughs, it was found to be an improved form of steam cultivation. He could not help thinking that, if the committee was to be continued, it would be desirable to get some infor-

mation regarding the appliance of steam engines to the double-furrow plough.

The CHAIRMAN said the Society were obliged to the gentleman who had put the question, and if he would write out his question in detail the Society could have no objection to answer it. The committee had given all the information they had obtained on the subject. There were experiments going on just now in most parts of the country with regard to double-furrow ploughs, and the information as to their results varied. He believed, however, that very much depended upon the soils in which they were used. They were frequently too heavy for two horses, and three were required.

Mr. LESLIE said that the reason he had mentioned the matter was that Mr. Fowler, whose plough had been so much praised, had taken great pains in the matter, and had improved Pirie's double-furrow plough very much. He considered that the experiments which had been made of Thomson's engines had been satisfactory so far as they had gone, and he understood that by their application to double-furrow ploughs a considerable saving could be effected.

The CHAIRMAN asked what the hon. gentleman wished the Society to do? Did he wish that the matter should be referred to the special committee for steam cultivation?

Mr. LESLIE said he should like to direct the observation of the committee to Thomson's india-rubber tire-wheeled engine.

The SECRETARY stated that the committee had exhausted their remit, and they now ceased to exist, but he had no doubt the suggestion would be at once taken into consideration by the directors.

Mr. WILSON (Edington Mains) said he had taken great interest in steam cultivation, and it was now nearly three years since he had worked Fowler's double engine, and it had given great satisfaction. Before getting it he made inquiries at those who had used it, and felt encouraged to go into the matter. He knew very well a great deal of the land he farmed was full of large stones, and he had a good deal of apprehension that he would meet with much difficulty in that direction. He was glad, however, to say that when it came to be dealt with in practice there was no such serious difficulty as was anticipated. In the land encumbered with large boulders there was no breakage except in the shares with which the plough was fitted. So far as the experiment had gone, it had yielded him very great satisfaction indeed. With regard to the matter suggested by the hon. gentleman, he must say that, judging from his experience, he had no hope of seeing any good done by steam cultivation with the engine travelling over the ground. When he required to take an engine diagonally across a field after it was cultivated by the powerful steam apparatus, they could always very well see the track of the engine; and to go over the whole surface of the ground with a ponderous engine, would only result in undoing what they had done. He thought the double-furrow plough was well adapted for fitting into the steam cultivator. In that way they could reduce the number of horses which were kept on a farm and were employed in working these double-furrow ploughs, and would overtake a large quantity of the seed furrow work which might not be so conveniently at all times overtaken by the steam tackle. The one being exceedingly well adapted to fit into the other, a man going into a new concern would economise his outlay very considerably by purchasing a stock of these along with his steam tackle. He thought that the proposal for an engine to move over the surface of the ground was in the wrong direction altogether. He had lain aside three pairs of horses by using the steam tackle.

Professor RANKINE thought it should be ascertained as a matter of fact whether engines with india-rubber tirewheels actually pressed on the ground so as to produce an injurious effect. His own impression was that they did not. They had been seen to pass over soft substances on the street without injury, as, for instance, a potato or a carrot; and having regard to the yielding nature of the tire, it was reasonable to suppose there could not be any great impression on the ground. However, that was a matter to be obtained by exact observation.

Mr. SMITH (Whittingham) said that Mr. Wilson had referred to an important point in speaking of the obstacles in the way of the steam plough. He thought it would be well to know from Mr. Wilson how deep the ordinary furrows

made by the steam ploughs were where the large stones existed.

Mr. WILSON said that where the soils were suitable for being worked, he had usually ploughed in the autumn stable land, or rather dug it, about a foot deep. But he might say, further, that in the fields which he knew had the greatest quantity of stones, he had been going over them with the ordinary subsoil plough, worked by horses, removing stones. Many of the fields had not been previously gone over with the subsoil plough, and in these no such serious inconvenience was met with as might be supposed. In fact, he had seen more breakage with a pair of horse ploughs—breakage in chains and swingle-trees—than with the steam plough, which went over the ground amazingly.

The CHAIRMAN: What kind of soil is it?

Mr. WILSON: Strong loam.

The CHAIRMAN: Drained?

Mr. WILSON: Yes; drained.

Sir W. STIRLING MAXWELL: Among how many horses have you effected the saving of three pair?

Mr. WILSON: Eleven pair.

Professor WILSON said, in reference to the subject to which their attention had been directed by the Hon. Waldegrave Leslie, it was only a question of the force and power required—whether it required more power for an engine to move itself across a field with a plough attached to it, or to transmit its force through tackle, like Mr. Fowler's and Mr. Howard's, for the purpose of dragging the implement up and down. These matters were tested very critically at the meeting of the Royal Agricultural Society at Leeds in 1861, and a report was made by the judges that the amount of power consumed in transmitting the force through a series of those tackles to the implement was infinitely less than what was required to move the engine along the ground, dragging the implement after it. He thought with Mr. Wilson they would be going entirely backwards if they adopted these engines, and that the experiments to which he had referred had set the question at rest. Mr. Thomson's engine was an admirable one for certain purposes, but he could not conceive it would abviate these difficulties and lessen the force required to draw an implement through the soil. The amount of power required to be transmitted through a series of wire ropes was much less than experienced engineers thought it would be.

The CHAIRMAN said he thought it right to remind the meeting that the instructions to the committee confined them in their investigations to the county of East Lothian, and they were not expected to go to other parts of the country. With regard to the question of engines going over the ground, his own experience was that it was quite difficult enough to get the engine to move over the ground without the plough. As to the depth in East Lothian, the greatest power seemed to be able to get down 12 inches, and his fancy was 14. He had asked several makers of implements if they could tell how the force was affected by the depth. Supposing a power to be exerted at a depth of 12 inches, what would be the power at 13, 14, or 15 inches? However, he could get no answer. It was a very interesting subject the diminution of the expenditure in the cultivation of land, whether it be by steam power or horses. To make three horses accomplish what four did previously was a very important matter. He thought that the committee would be very glad to take advantage of Mr. Waldegrave Leslie's proposition.

The Duke of Buccleuch moved—"That the special committee on steam cultivation be renewed, and that the question of double-furrow ploughs drawn by Thomson's indiarubber tire-wheeled engines be considered; and that the committee also take into their consideration generally the subject of cultivation by steam." He thought it would be very desirable to have all the information they could get on the subject. He had only one suggestion to make, and that was that the committee should not be restricted to any one portion of the country in making their investigations, but, if necessary, might go across the Border, and see what had been done there.

The motion was then agreed to; and, on the suggestion of the Duke of Buccleuch, it was agreed to remit to the directors to draw up details for the guidance of the committee.

Mr. GILLON (Walkhouse), said that, as convener of the Veterinary Committee, he had to report that Mr. Wm. Duns, veterinary surgeon, Dunbar, had been appointed to fill the

Chair of Cattle Pathology. Mr. Duns was a graduate of the Edinburgh Veterinary College, and had studied under Professors Dick, Strangeways, and Dalzell, and had obtained his diploma in 1863. Since then Mr. Duns had been in constant active practice. He (Mr. Gillon) might be allowed to state that, in this instance, a very able man had been appointed, and he had no doubt that Mr. Duns would be a credit to the college to which he belonged, as well as a great advantage to the public whom he would serve. The winter session of the college of 1869-70 was opened on the 1st November by the magistrates of Edinburgh, on which occasion Principal Williams delivered his introductory address. The attendance at the college had greatly increased in number—there being now ninety-five students. This number had never before been approached. It was also gratifying to know that the students were of a superior class to what they used to be, and were very orderly and well conducted. Several of the students had come from a distance—from England, Ireland, and Canada, and some even from New Zealand. He thought that said a good deal for the fame of their College abroad. The practice of clinical surgery, which he regarded as one of the foremost branches in veterinary science, had been more and more in practice lately than it had been for many years previously. He was sorry that the accommodation for the proper practice of this branch was very defective in the College; but how that was to be remedied it was not for him to say. The committee and the board of directors had had before them a representation from the Royal College of Veterinary Surgeons, London, regarding the preliminary examination of students, and asking the support of the society in the matter. Although the committee were fully agreed as to the advantages of a scheme of preliminary examination, yet, after carefully considering the whole matter, they were of opinion that the society should not take the matter up, but leave it to be settled entirely by the different teaching schools.

Mr. LESLIE asked whether the question of shoeing horses had been under the notice of the committee?

Mr. GILLON said that had not yet been before the committee; but he thought it was a subject that the committee should certainly take up. So far as his experience of thirty years went, he thought they had not arrived at a proper method for shoeing horses. He had taken some trouble in looking over the new systems proposed. The best that he had seen was the Charlier system which had been brought out in Paris. It had been tried to a great extent with omnibus horses—no fewer than 5,000 or 6,000 were working under the system—and it was found to work admirably. Whether it would do for hunters and roadsters he could not say. The advantage of this method was that it put the horses' feet into a more natural position than could possibly be the case with the shoe at present in general use. He observed that the society offered a prize for the best method of shoeing horses, with special reference to those systems recently introduced. The prize would consist of a medium gold medal or five sovereigns, so that they would have a chance of getting a good deal of information on the subject. He believed that Principal Williams was to bring out a new system of horse shoeing.

Principal WILLIAMS said he had had some experience of the Charlier system, and might say briefly that for hunters and light saddle horses, and for horses not required to be very hard worked, it stood pre-eminent over any other system. For omnibus horses and horses on the road, the Charlier shoe would have to be made with steel; it wore out too quickly. At present, in the case of these horses, the shoe went away in the course of a few days at the toe. For hunters he could recommend it with confidence to those present.

The CHAIRMAN asked Principal Williams if there was any general system of shoeing horses that he could recommend?

Principal WILLIAMS said the whole secret of horse-shoeing lay in the fact that the foot should not be mutilated, but left as whole as possible. It should be left sufficiently strong to protect the internal and sensitive parts. If this were done the form of the shoe would be a matter of secondary importance.

Sir W. STIRLING-MAXWELL asked if the Charlier system was not adopted in the French cavalry?

Principal WILLIAMS said he could not testify as to the Charlier shoe having been adopted in the French cavalry regiments; but he knew that at Chatham a graduate of the Edinburgh College had introduced the Charlier shoe, and with great success.

Mr. LAMLEN said a large number of cavalry regiments in France had adopted the Charlier shoe by order of the Emperor, and a large number of the omnibus horses in Paris had worn it for two months.

Principal WILLIAMS said that to make the Charlier shoe generally adaptable all that was required was to tip it with steel round the toe to prevent it wearing. If that were done they would have a revolution in horse-shoeing.

The SECRETARY stated that the members were aware that the directors had given leave of absence to Dr. Anderson, the society's chemist, in consequence of his having to spend the winter in the south of England, on account of his health. He read the following report on the work of the chemical department during the past year, sent by Dr. Anderson:—"In reporting on the work of the chemical department, I believe I may say that in no previous year has the work been so large and varied. The number of analyses made for members of the society has amounted to no less than 379, embracing the analyses of soils, waters, manures, feeding stuffs, and, in fact, all the ordinary articles of agricultural consumption. This exceeds the analyses made by Dr. Voelcker for the Royal Agricultural Society, although the number of members of that society exceeds that of the Highland and Agricultural Society by more than 1,000. The experience of the year's operations has been, on the whole, satisfactory; and though cases of adulteration are still too numerous, I think it may be said that some improvement in the quality of manufactured manures is slowly becoming manifest. One of the most troublesome matters in this respect lies in the great difference in the quality of different manufactured manures, none of which can be described as adulterated in the strict sense of that word, but which differ so greatly that, though sold at the same price, one may be worth £1, £2, or even £3 per ton more than the other. This occurs to such an extent that by the judicious choice of manure the farmer can often effect a very material economy, and numerous cases have occurred in which £10, £20, and £30 have been in this way saved on comparatively small purchases of manure. During the past season the series of experiments extending over a rotation have been continued, and a set of experiments on the action of different manures on the potato have been successfully carried out. For some time past the state of my health has been such that, acting under the advice of my medical friends, I have been compelled to obtain from the directors leave of absence from the active work of the laboratory. I have, however, taken care to make such arrangements that the work has been carried on without interruption, and that I am able to exercise a close supervision over all that is done. All the letters relating to analyses are sent to me, so that I may determine the exact nature of the analysis necessary to supply the information required. The analysis, when finished, passes through my hands, so that I am able to give my opinion on any matters of interest or importance which it reveals. On the state of my health I am glad to be able to give a favourable report, for though I have had a pretty severe illness during the greater part of December and the present month, which had somewhat retarded my general progress, my medical advisers consider that I have made as much progress as could be expected, that my case must be very tedious, and that I must not attempt to engage in active work for some time. There is one point on which I am compelled to ask the indulgence of the society. I had hoped to have published the results of the field experiments in the Transactions for this year, but my illness during December, which is the very time during which the reports must be drawn up, has made it quite impossible for me to do this, and I am most reluctantly compelled to ask permission to postpone this until next year. As regards the rotation experiments, I believe it will even be advisable that they should be postponed till quite complete, when the results will be much more useful and instructive than if they are published in a fragmentary form at the end of each season, and I would leave it to the society to decide whether this course should be adopted. The potato experiments, of course, I shall put together as soon as possible."

THOMAS ANDERSON.

January 18, 1870."

Mr. WALKER (Bowland) reported that the following premiums had been awarded for reports on subjects connected with the science and practice of agriculture since the general meeting in June:

1. The gold medal or £10 to William Alfred Gibb,

Gillwell Park, Sewardstone, Essex, for a Report on the Hot Blast Fan used in Harvesting.

2. The gold medal or £10 to William Wallace Hoxier of Tannochside, Bellahill, Glasgow, for a Report on Agricultural Drainage.

3. The gold medal or £10 to Robert Hutchison of Carlowie, Kirkliston, for a Report on the Diets of English Agricultural Labourers.

4. The gold medal or £10 to George Malcolm, factor, Invergarry, Inverness-shire, for a Report on Striking the Fairs Prices.

5. The gold medal or £10 to the late William Paterson, Union Street, Dundee, for a Report on Propagating New Varieties of Potatoes.

6. The gold medal or £10 to Patrick Shirreff, Haddington, for a Report on the Means employed by him for Obtaining a New Variety of Wheat called "King Richard."

7. The gold medal or £10 to N. P. Stewart, Cemaes, Llanrwst, North Wales, for a Report on Dipping, Pouring, and Smearing Sheep.

8. The medium gold medal or £5 to George Armatage, M.R.C.V.S., Linslade, Leighton Buzzard, Beds, for a Report on the Duties of the Veterinary Surgeon in Examining Horses as to Soundness.

9. The medium gold medal or £5 to said George Armatage for a Report on Veterinary Contracts.

10. The medium gold medal or £5 to Robert Laidlaw, Chapelhope, Selkirkshire, for a Report on Dipping, Pouring, and Smearing Sheep.

11. The medium gold medal or £5 to John Milne, Laithers, Turrif, for a Report on the Agriculture of Aberdeenshire and Banffshire.

12. The medium gold medal or £5 to Andrew Spreull, M.R.C.V.S., Milngavie, Glasgow, for a Report on the Duties of the Veterinary Surgeon in Examining Horses as to Soundness.

Mr. WALKER also stated that the directors had resolved to publish the Report on Agricultural Drainage, by Mr. Hoxier (No. 2 of the above list), in a separate form for sale, so as to place it within the reach of all interested in such operations.

Mr. WALKER further reported that the following premiums had been suggested for competition in 1870 and subsequent years:

On the agriculture of East Lothian	... ..	£30
On the agriculture of Inverness-shire	... ..	30
On ancient farming customs in Scotland	... ..	20
On autumn manuring	... ..	20
On land manuring	... ..	5
On manures produced by different kinds of feeding	... ..	20
On manures made with and without cover	... ..	20
On covering grain crops in harvest	... ..	10
On improved varieties of agricultural plants	... ..	10
On failures of the wheat crop	... ..	5
On the comparative productiveness of potatoes	... ..	10
On the comparative productiveness of turnips	... ..	10
On the cultivation of cabbage as a field crop	... ..	10
On vegetable productions of India, China, and America	... ..	10
On the best modes of housing fattening cattle	... ..	20
On different descriptions of food for stock	... ..	20
On disinfecting agents for stock	... ..	10
On the operation of the Contagious Diseases (Animals) Act, 1869	... ..	10
On the different modes of shoeing horses	... ..	5
On lambing	... ..	10
On transporting butcher-meat	... ..	5
On vessels used for transporting milk from country districts	... ..	5
On rural economy abroad susceptible of being introduced into Scotland	... ..	10
On the general improvement of estates by proprietors	... ..	10
On the reclamation of waste land by tillage by proprietor or tenant	... .. £10, £5, and silver medal	
On the improvement of natural pasture without tillage	... ..	10
On the invention or improvement of implements of husbandry	... ..	50

The report was approved of.

Professor BALFOUR reported that the following premiums had been awarded in the department of Woods and Forests during the past half-year:—

1. The medium gold medal or £5 to Robert Hutchison, of

Carlowrie, Kirkliston, for a Report on the Effects of the Dry Season 1868 on Trees and Shrubs.

2 The minor gold medal to John Blaikie Webster, forester, to Sir William Verner, Bart., Church Hill, Verner's Bridge, Moy, Ireland, for a Report on the Growth of the roots of Coniferous Trees after Felling.

3. The silver medal to the author of a Report on the Effects of the Dry Season 1868 on Trees and Shrubs, bearing the motto "Hortus Sicca."

Professor BALFOUR further reported that it was proposed to offer the following premiums for competition in 1870:—

On extensive planting by proprietors	£10
On the general management of plantations	10
On planting on exposed or barren tracts	10
On the value for economical purposes of Corsican fir	5
On forest trees of recent introduction	5
On home-grown timber as compared with foreign	5
On continental modes of forestry	10
On prices of forest produce	5
On effects of dry season of 1869 on trees and shrubs	5
On seedlings of conifers	5

The report was approved of.

TRANSACTIONS OF THE SOCIETY.

Mr. IRVINE, of Drum, reported that the next number of the Society's "Transactions," being No. 5 of the Fourth Series, would be published in February, and that it would contain the following prize reports:—

1. On the Agriculture of Aberdeenshire and Banffshire, by James Black.
2. On American and Canadian Trees, by John E. Brown.
3. On Pleuro-pneumonia, by George Armatage.
4. On the Diseases of Forest Trees, by John B. Webster.
5. On the Management of Poultry, by Robert Hutchison.
6. On the Corsican Fir, by John Morrison.
7. On the comparative Advantages of Spring or Autumn Manuring, by John Allan.
8. On the Formation and Management of Young Plantations, by Robert E. Brown.
9. On Sanitary Arrangements for Stock, by William Brown, jun.
10. On the varieties of Poplar best suited to the Climate of Scotland, by Robert Hutchison.
11. On Propagating New Varieties of Potatoes, by the late William Paterson.
12. On the Improvement of the Farm of Quarryhead, by James Stevenson.
13. On Forest Trees of Recent Introduction, by Robert Hutchison.
14. On the Cultivation of Cabbage as a Field Crop, by Gilbert Murray.
15. On Striking the Fairs Prices in Scotland, by George Malcolm.
16. On the Duties of the Veterinary Surgeon in Examining Horses as to Soundness, by George Armatage.
17. On the Same Subject, by James Spruell.
18. On Planting on Exposed or Barren Tracts, by C. Y. Michie.

And any other prize reports the directors may be enabled to publish. The Transactions will contain the report by the Special Committee on the various systems of cultivating land by steam-power in East Lothian—the proceedings at the board and general meetings—the premiums awarded in 1869, and of those offered in 1870—the accounts of the income and expenditure of the society for 1868-69, and other official documents.

The following communication from the Board of Trade was submitted:

"Office of Committee of Privy Council for Trade, 18th Jan. 1870.

"Sir,—I am directed by the Lords of the Committee of Privy Council for Trade to transmit to you, for the information of the Highland and Agricultural Society of Scotland, and for the purpose of being made public, the enclosed analysis and report upon the guano at Guanape Islands, which have been received through the Secretary of State for Foreign Affairs.—I am, Sir, your obedient servant,

"LOUIS MALLT.

"The Secretary of Highland and Agricultural Society of Scotland."

"The guano of the Guanape Islands partakes of a composition varying much according to locality and depth. In general, on the north as well as on the south island, the superficial strata exposed to the vicissitudes of the atmosphere are deficient in soluble salts, and consequently in ammoniac, augmenting the proportion of phosphate of lime. In the lower strata, on the contrary, the quantity of ammoniacal salts augments, thus diminishing the phosphate of lime. It is probable that by the action which has dissolved the ammoniacal salts of the superficial strata it may have penetrated by infiltration into the strata underneath, thus increasing the richness of the latter, so that in the end the ammoniac, which forms the most valuable principle of guano, is not lost, being concentrated as it is in the deeper layers of guano.

"In the southern island the change is manifested in a manner still more evident, as of the three samples that have been analysed, the most superficial contains only 7.562 per cent. of ammoniac, and in the sample extracted from a greater depth the ammoniac contained in 100 parts of guano rises to 18.820, a greater quantity than is contained in the best guano of the Chincha Islands.

"This last is formed almost entirely 95.000 of ammoniacal salts, soluble in water, consisting in greater part in oxalate and urate of ammonia, and should not be considered as a variety of guano, but as a combination of the soluble parts of the guano which appear to have been separated by the action of water.

"This sample, although possessing a strong ammoniacal smell equal to the guanos of the best quality, differs, nevertheless, through its other physical characteristics, presenting itself under the form of a pulverulent homogeneous matter of a more pronounced yellow colour than that of common guano, and with a crystalline structure only to be perceived through the medium of a microscope.

"If the bed of this material is in reality seven feet in thickness, according to Mr. Harris, who extracted the samples, it appears to me that a greater advantage could be obtained by selling this material to certain manufacturers of chemical productions, as liquid ammonia, oxalate of ammonia, or uric acid could be extracted with much facility for the manufacture of the colouring matter called 'murexide.'

"As this sample is very rich in ammonia, and very poor, on the contrary, in phosphate of lime, containing less than 5.100 of this salt, it could not be employed with advantage in agriculture, one of the principal elements being wanting for plants; and in case it could not be sold, as was suggested, to manufacturers of chemical productions, it could be utilised very well by mixing it with the guano from the Lobos Islands, which in general contains a strong proportion of phosphate of lime, and, *per contra*, is very poor in ammonia. By mixing the material in question, this guano would be improved, and would cause the value of the guano of the Lobos Islands to be enhanced, equalising it with the guano of good quality.

"Some of the samples of guano from Guanape subjected to analysis contain a strong proportion of water, so that, when the guano is pounded in a mortar, with the object of rendering it more homogeneous before proceeding to analyse it, it collects and forms a really sticky paste.

"At first sight, it would be said that this guano had been wetted; but, recognising the great hygrometric power which guano has, and knowing that the sample in question had been extracted in winter-time, when the atmosphere of the coast is almost entirely saturated with water, the great quantity of moisture which it contains is easily explained. I myself at another period made some experiments for studying the hygrometric power of guano, by keeping exposed to the open air a certain weighed quantity of guano; and I have beheld it increase or diminish in weight according as the weather was more or less dry.

"The element which is of most value in guano after the ammonia is phosphoric acid; but, as is known, almost the whole of the phosphoric acid contained in the guano is combined with lime, forming a phosphate of lime-tri-basico, not very soluble in water, and consequently absorbed with difficulty by plants.

"Various chemists who busy themselves with the study of guano have thought, and with justice, that by rendering the phosphoric acid contained in guano more soluble in water, and consequently easier to be absorbed by plants, the value of this material would be augmented.

"So, for many years, Mr. Neabit advised mixing guano with sulphuric acid, the which, by uniting itself with part of the lime, leaves free a part of phosphoric acid, which forms with the other portion of the lime a phosphate acid easily soluble in water. Mr. Richardson put this theory in practice, and asked for a patent for the transformation and amelioration of guano.

"Now, as not the whole quantity of phosphoric acid contained in guano is found in a state insoluble, under the form of tri-phosphate of lime, I have deemed it necessary in the analysis which I have made to make known likewise the

proportion of soluble phosphoric acid which the guano of Guanape contains." [The results of the analyses were given in an elaborate table.]

Two communications which had been received from the Board of Trade were laid upon the table. One was on the culture of the beetroot, and the other a number of reports on the cultivation of flax on the continent, which reports had been received at the Foreign Office.

On the motion of the Duke of Buccleuch, a vote of thanks was given to the Chairman, and the meeting separated,

LANDLORD AND TENANT IN SHROPSHIRE.

At the dinner of the Shropshire Chamber of Agriculture, Sir BALDWIN LEIGHTON said: On the bench magistrates had often no easy tasks to perform—they had to hear both sides of a question; and, upon the most contradictory evidence say which was right. He believed the magistrates always acted in such cases to the best of their judgment; and he also believed they had thus earned the good opinions of the public. If they did not succeed in maintaining their good opinions they (the magistrates) must fall. Among the theories of the present day some were good and some bad—some were as wild as wildness could run. Some persons clamoured for paid magistrates; but the advantage to be derived from such appointments was not plain. If they had a stipendiary magistrate they might, perhaps, get one man who would do the work very well, and another would do it as badly. It was not every lawyer who knew so much of agricultural law, if he might so term it, as their present magistracy. A stipendiary magistrate might be born and bred in London, or some other large town: and in many cases would not even be acquainted with the language of the agricultural districts—he would have to inquire what was a "cratch" and in what condition a man was when he was "clammed." In this way, from not knowing the Welsh language, he (Sir Baldwin Leighton) experienced great difficulty in a neighbouring county (Montgomery) during the nine years he was Chairman of the Court of Quarter Sessions in that county.

Colonel CORRETT said: Those who knew anything about the London markets and about prices knew the difficulties the producer had to labour under when the supply exceeded demand, and the cattle could not be driven away from the market alive. Butchers then gave any price they liked. He had been informed by a farmer in that county that he had lost £5 a-head on cattle in this manner. And was the consumer benefited by this state of things? Certainly not, for they found that the stock sent up was not usually excellent, and they must, he thought, attribute it to the fact he had mentioned—that proprietors were unwilling to risk the loss upon their stock by sending it to that particular market. This was an instance of what might be done by well-considered measures of the Chambers of Agriculture, and he thought it a point that should receive their attention. He urged that nothing could be done in relation to any question by mere discussion. They must take the example of the Chamber of Commerce in urging on the cause of "Reciprocity," and apply it to themselves, before the next session, in relation to the subject of local taxation. He recommended the further agitation of this question, expressing his belief that unless further pressure were put upon Parliament they would not be likely to get the question considered this session.

Lord BRADFORD, the president, said he could not help thinking that a considerable amount of gratitude was due from the agriculturists of that county to some of the agricultural associations in the county that they had had before that society was originated, and some of which still existed. He referred particularly to one association with which he had been connected—the Wenlock Farmers' Club. He thought that that society deserved a word of acknowledgment. He was present a short time at the last meeting of the Chamber, but he was, unfortunately, rather late, and as he did not hear the whole of the discussion, he did not take any part in it. The discussion was as to whether the Chamber should select for their next discussion the subject of roads and highways, or that of ground game. For his own part he should

have had no objection to have discussed either subject, but if he had voted at all, he should have given his vote for the question of highways. He thought this an important matter, and one that should be discussed at once, as they had reason to suppose that the Secretary of State intended to bring in a bill upon the subject, and it was most desirable that the opinion of the local Chamber should be known. He repeated that the subject was of great importance, and one that was deserving of the attention of Chambers of Agriculture, for he was afraid the bill passed a few years ago had not tended to lower the rates throughout the country. There was no doubt, he thought, that the roads and highways of the country were in a most unsatisfactory condition—at least they were so in that part with which he was connected. There were other important matters that would require to be discussed by the Chamber. Among them was the great question of the sewage of towns, which was, at present, in its infancy. It was, of course, of more importance to those who lived in the neighbourhood of the large towns, but it was a growing question everywhere, and he thought the Chambers of Agriculture of the country may be of the greatest possible use by raising discussions upon it. There were certain things that were within the control of each individual; there were other things that required the co-operation and the union of the large body of farmers of that country. There were questions upon which public opinion may be said to have expressed itself, and which were ripe for legislation, and there were others that were not so. It was the former class of questions that were ripe for legislation, not the latter. Another very important question that Chambers of Agriculture should entertain was the great question of education. It, of course, came under this great question of local taxation, which, in fact, comprehended all the other questions that had been alluded to there that evening. He had observed the rather significant cheering just now when he alluded to the question of game, and here again he was rather inclined to take a leaf out of the book of his noble friend and distinguished predecessor, Lord Granville, who said that there was an old saying to the effect that a certain class of persons rushed in where angels feared to tread. He did not think he (the President) should have said one word in allusion to that, had he not within the last few days read a paragraph with regard to himself which had surprised him a good deal. It was to the effect that the "farmers of Shropshire would have an opportunity on Saturday next (that day) at Shrewsbury of expressing their views on this question, for Lord Bradford, one of the greatest game preservers in the county would preside at the dinner." He was not generally in the habit of taking notice of things of that sort, and as the author of the paragraph might be in the room at that very moment, it would be uncivil to his face to contradict him; but this he (the speaker) may say—he thought all those who knew him, knew pretty well that shooting was by no means what he may call his sport. He liked a day's shooting, as he thought his noble friend said last year, but the sport he indulged in—his sport—was fox-hunting. He cared little more for shooting than for the sake of his friends. He thought therefore that the man who wrote that paragraph did not know him very well. He would go further, hoping, however, they would forgive him for speaking so much of himself. He had frequently seen in the public press during the last twelve months paragraphs headed with large letters "An example to landlords," and all that sort of thing, which were to the effect that lord so-and-

so had done this or the other with reference to his game, and expressing a wish that others would follow the example. He had never troubled himself to make any answer to these things, but as he was now on his legs and speaking of himself, he would say that on those estates which he had inherited his tenants had now, and had before the land came into his possession, the liberty to kill rabbits whenever they liked. He found no fault with his tenantry for killing the rabbits, he was more inclined to find fault when he found too many than when he found too few. But he assured them he did not take to heart at all any little paragraph of that sort. He hoped the tenant farmers in that room would excuse him if he told them a little story, which, at all events, had the merit of being true. He was out hunting one day, not very long ago, with a pack of hounds, and going into one of the covers, the master was asked how it was that he drew that cover, and he said, "Because Mr. So-and-so asked me to do it, as the foxes were doing so much damage—they were eating all the rabbits" (laughter.) That was a fact. There were some who would like to have more rabbits, and some less; and for his own part he was certainly not in favour of too many. He would rather have foxes upon his property than any kind of game.

Mr. GEORGE CURETON said: I have much pleasure in responding to the toast of Agriculture. We all know its importance. It is, as a pursuit, a pleasant and invigorating one, but not a very profitable one. We farmers cannot make fortunes like those who are engaged in commerce. Circumstances put me into harness early. I have had forty years' servitude, therefore I may presume to be a practical farmer; and though we are called "clod-hopping farmers," if we, by intelligence and perseverance, with the use of the modern appliances, make two blades of grass grow where only one grew before, and produce two beasts where only one was produced before, I think we are worthy of our country. I do not generally agree with the would-be agricultural

leader, Mr. Mechi; but what he said lately, with regard to ploughing up and tilling the poor pastures of this country, I quite concur with, since the produce would be much increased thereby. I do hope every effort will be made to get the meeting of the Royal Agricultural Society here next year; and we shall see great strides made in the breeds of our live stock, and the vast improvement in agricultural machinery since 1845, when it was held here before. I should like to mention the very great improvement in the breed of Irish pigs, which I have had the opportunity of observing, having acted as judge frequently at the Royal Agricultural Shows in Ireland. Twenty years ago they used to drive along the Holyhead road, near which I live, to markets in England, ugly, long-legged animals, with slopping ears that would knot under their chins, and backs like a knife. Now the Irish pigs are of first-rate quality, and uniform in character and symmetry. The British farmer requires security for capital invested in permanent improvements, and other extraordinary judicious outlays. He wants relief in local taxation, by bringing other property to bear its fair share of the burden; he wants fairplay in free trade. As long as there is such an amount of taxation on his produce, in the shape of a malt-tax, I say the present state of the law is anomalous, and an injustice. He wants protection from the depredations of the ground game, which, in many instances, are very veracious and injurious to the tenant-farmer, and a loss to the community. I speak with some experience; and I say that however clever and careful a valuer is, he cannot arrive at a satisfactory result as to the estimate of the damage done by ground game. I do not speak feelingly on this subject; for my noble landlord, Lord Powis, allows me to kill the hares, and he hates the sight of a rabbit, so that I sustain no damage; and I only wish all landlords would follow his example. I believe if these privileges were conceded to the British farmer he would better his position, and produce more food for the increasing population of this country.

INOCULATION FOR PLEURO-PNEUMONIA.

At the meeting of the Council of the Norfolk Chamber of Agriculture, the following report was presented:

First report of the experiments of the inoculation of cattle for pleuro-pneumonia in Norfolk, commenced in November, 1869, by William Smith, M.R.C.V.S., Norwich.

Having been requested to report to you the progress made in the inoculation of cattle for pleuro-pneumonia which I have been conducting, the following detailed statements and observations are respectfully submitted for your consideration.

It is desirable to observe that as these experiments were all made on infected farms—indeed, in infected herds—they are open to objection, as at the time of operating, some of the animals, probably all that have taken it since the operation, may have been incubating the disease in the system, but this was an evil that could not, under existing circumstances, be avoided; agriculturists are not proverbial for readily adopting anything novel, and perhaps they are right; difficulty was found in obtaining the owner's consent to have the operation performed, even in infected herds, whilst in healthy ones, in no instance has the proposal to inoculate them met with success, although they were assured that it was highly improbable and next to impossible that by this means pleuro-pneumonia would be introduced into their herds; but who can be surprised at this? Individual exertions must be aided by a responsible body, and supplemented with means, if it be desired to thoroughly test the value of inoculation as a preventive of pleuro-pneumonia, and it must be done on a scale sufficiently comprehensive to enable us to form sound, practical, and definite opinions; half doing things in medical as well as in most other matters, leads only to confusion and error.

The subjoined details of the experiments follow each other in the order in which they were conducted, and were made with fresh lymph, selected from the lungs of animals suffering from a mild type of pleuro-pneumonia, in which only one lung was involved.

Experiment No. 1.—On November 11th were inoculated in

the tail, about three inches from the tip, eight Irish steers, at Griston, age 1 year, condition poor, unhealthy looking, registering a very high internal heat, in one the thermometer stood at 104° degs., and in others the reading was above 103° degs., as will be seen by reference to the table below. No local swelling or redness worth noticing followed the operation, or observable constitutional disturbance.

Register of internal heat of body at the time of operating, as indicated by Cassella's self-registering clinical thermometer:

Steer No. 1	.....	102° 4.5	The normal heat
" 2	.....	*103 3.5	in the ox being 102,
" 3	.....	102 3.5	those steers marked
" 4	.....	*103 1.5	with an asterisk in
" 5	.....	103 4.5	the tables were con-
" 6	.....	103 2.5	sidered suspicious.
" 7	.....	104	
" 8	.....	*103 2.5	

On November 19th, the owner, writing to inform me how his bullocks are, says: "I do not see any of them fall off in any way from the inoculation. On Wednesday (five days after the operation) I saw some fluid issuing from the spot where the inoculation was performed."

Experiment No. 2.—On November 17th, one bull at Thorpe St. Andrew, from an infected herd, was operated on, his two companions having died from pleuro-pneumonia, age 3 months, condition fair. Result to this date—unaffected, either locally or otherwise.

Experiment No. 3.—On November 23rd were inoculated eleven Irish steers from an infected herd at Beighton, age 2 to 3 years, condition fresh. No local specific action was set up in the tail. Result—three attacked, two of which were killed and one recovered.

Experiment No. 4.—On November 29th, ten steers from an infected herd at Bradfield, age 3 years, stall-fed, condition

forward. No heat or tenderness of the inoculated part of the tail or any observable effect followed. Result up to this time—all well.

Experiment No. 5.—On December 6th, nine steers from an infected herd at Beaham were operated on, age 3 years, condition forward. No local or other observable action ensued. Result—none attacked.

Experiment No. 6.—On December 7th, eighteen steers and stags, 1 and 2 years old, some fresh in condition and others poor, Irish bred. Result—before the end of the month three were attacked and six since, one badly diseased and died, four others were killed or died, and two recovered. These were part of an infected herd at Booton, to which further reference will be made.

Experiment No. 7.—On December 8th, twenty steers from an infected herd at Freethorpe, age 2 to 3 years, condition fresh. Result up to January 14th—all well. In this, as in the experiments which follow, no local or constitutional disturbance or sign of illness occurred after the operation, and it will not be necessary to repeat the observation.

Experiment No. 8.—On December 23rd, three Irish steers from an infected herd at Blodfield, aged 1½ year, condition fair. Result up to this date—healthy.

Experiment No. 9.—On December 30th, eight home-bred inoculated, of various sex and age, condition fair, from an infected herd at Brundall. Result up to January 14th—none attacked.

Register of internal heat on December 30, at the time of operating, and on January 2 and January 6, 1870.

No.	Breed.	Sex.	Age.	Condition.	Dec. 30.	Jan. 2.	Jan. 6.
1	Home	Heifer	3 to 4 yrs	Fresh	101° 3-5	101° 4-5	102° 2-5
2	"	"	"	"	102 2-5	102 1-5	102 1-5
3	"	"	"	"	*103 3-5	103	103 1-5
4	"	"	6 mos.	"	*103 4-5	103 4-5	103 4-5
5	"	Steer	"	"	103 2-5	102 4-5	103 2-5
6	"	"	"	"	103 2-5	102 4-5	103 4-5
7	"	Heifer	3 to 4 yrs	"	101 2-5	102 4-5	102 1-5
8	"	"	"	"	102 2-5	102 3-5	102 1-5

Summary.—Inoculated, 87; attacked with pleuro-pneumonia, 12; died and slaughtered, 9; recovered wholly or partially, 3; remaining at present healthy, 75.

Thus we see that only 13 animals out of the 87 inoculated were attacked with pleuro-pneumonia and these I confidently believe, took the disease in a natural way, for these reasons, that they were not at all affected locally by the operation; and that inoculation for other contagious diseases in animals, such as small-pox in sheep, rinderpest, and foot-and-mouth disease in oxen, communicates the specific malady to 9ths or more of those operated upon in a form either mild or more or less violent.

Having already stated that these experiments were all made in infected herds, it is worthy of note that those subjected to the experiments numbered 6 and 9 had lost several animals from pleuro-pneumonia prior to the inoculation, in fact, the disease had been amongst them for some week, and in No. 6, four animals had died from parasitic disease of lungs as well as some from pleuro-pneumonia.

After these remarks it will be apparent that I do not attach much importance to the results of these experiments. They are, in my opinion, insufficient and incomplete. I think, however, they incontestably demonstrate two facts: 1st, that pleuro-pneumonia inoculation, when scientifically performed is a harmless operation, and not likely to cause an extension of the disease, and that the loss of animals' tails and other untoward effects, when they occur, are produced by the ignorance and want of skill of the inoculator; 2ndly, that it differs in most essential points from the conditions induced by inoculations in other contagious diseases, such as small-pox or cattle plague. In the inoculation for pleuro-pneumonia we have a total absence of the manifestations apparent in other inoculations; there are no local signs of its having taken, nor constitutional or febrile disturbance that can be detected, even though we call in the aid of that delicate instrument, the clinical thermometer, as proved by its readings in experiment No. 9, the particulars of which are in a tabulated form under it.

As no opportunity has occurred of examining the lungs after death of inoculated animals under circumstances favourable for the forming of a truthful opinion as to their condition,

it may yet be discovered that some morbid lesions, narrow exudation, so characteristic of pleuro-pneumonia, or traces of such, may exist as a consequence of inoculation, and in order to put this to the test, as well as the whole question of the prophylactic influence of the operation, I venture to suggest the following series of experiments.

Proposed Experiment No. 1.—That twelve young animals bred on a farm where pleuro-pneumonia has not existed for four years should be purchased, and inoculated, and that four should be slaughtered six weeks, four twelve weeks, and four sixteen weeks after the operation, for the purpose of examining minutely the cavity of the chest, pleura, and lungs.

Proposed Experiment No. 2.—That 100 young oxen, bred under the same conditions as in proposition No. 1, should be purchased, and that 50 of them should be inoculated on the farm, and 10 of the inoculated, and 10 of the uninoculated should be sent into five infected herds, and kept on the premises, where practicable, for a period of from six to twelve months.

Proposed No. 3.—As it is a well-known fact that certain farms in this county have never, for the last fourteen or sixteen years, been without one or more cases of pleuro-pneumonia occurring annually amongst the herds, that the proprietors of such farms shall be induced to have all fresh animals introduced upon them for the next four years inoculated.

Before concluding this report, I beg to thank Mr. J. D. Overed, M.B.C.V.S., of Blodfield, for the ready and valuable assistance he has rendered in the prosecution of the foregoing experiments.

To Professor Gamgee, of London, thanks are especially due for the kind presentation of two clinical thermometers of very delicate construction, which he had regulated at Greenwich, before sending them for the purpose of these experiments, Norwich, Jan. 15 1870.

THE LANDLORDS AT THE CENTRAL CHAMBER OF AGRICULTURE.

At the dinner of the Hereford Chamber of Agriculture,

Mr. VAUGHAN, of Brobury Court, said as he had been honoured by them in being sent to the Central Chamber as their deputed member, he must say that he had seen something at the meetings of the Central Chamber which did not please him. He thought the opinions of the deputed members did not have that force they ought to have. All was not right. And he felt that he should not be doing his duty to the Chamber he had the honour of representing at the Central Chamber if he did not say what struck him as not carrying out what that Central Chamber ought to be. The Central Chamber was supposed to consist of a Council of its own members and of the deputed members sent by the country chambers. But what did he find? He found (with all due deference to Sir Herbert Croft and Sir Joseph Bailey) the parliamentary element very strong there. He alluded to the peers and the members of the House of Commons who were present. He thought that the discussions which took place were a good deal toned down, if he might so speak, by the repeated interpolations of the peers and the members of the House of Commons who were present. There was one gentleman—Mr. Corrance—he was like an irrepressible "Jack-in-the-box." He was continually upon his legs; he was eleven times upon his legs in one discussion, and it was difficult to put in a word. Now he understood that by the laws constituting the Central Chamber it consisted of the Council and the deputed members, and that the peers and members of the House of Commons who attended the meetings were there to "read, mark, learn, and inwardly digest;" and in their respective places in Parliament give effect, if they thought right, to the decisions of the county chambers which were expressed through the Central Chamber.

Mr. BURROWS said that he could in some respects bear out the remarks of Mr. Vaughan with regard to the meetings of the Central Chamber. He was present at one meeting of the Central Chamber, and he was then convinced that what Mr. Vaughan had stated was true. At the meeting he referred to the same question was brought forward, and the landlord interest was much too strong. Peers, members of the House

of Commons addressed the meeting, and landlord after landlord spoke strongly against any further legislation upon the subject. There were amendments to be brought forward there, which he thought were shelved. He knew that Mr. Duckham had an amendment which he was to second, but the chairman (Mr. C. S. Read) held up a lot of amendments and asked the meeting if they wanted any more? The meeting seemed to think that they had had enough; but he thought that meeting broke up without properly discussing the question. He thought the tenant-farmer interest required to be more strongly represented at that meeting, and he hoped that upon future occasions it would be.

QUESTIONS FOR CHAMBERS OF AGRICULTURE.

At the meeting of the East Suffolk Chamber of Agriculture last month, a list of subjects selected by the Central Chamber having been read, Mr. NEWSON GARRETT said there was one question upon which he felt strongly, and he did not know whether this was the right time to introduce it. He wished some one more immediately connected with agriculture, but not more deeply interested in it, should have spoken upon it. He saw a good many farmers present, and he maintained that it was one in which they, and we all, ought to feel an interest. He did not intend to make a long speech, but he sincerely hoped that before long, before many months were over, that this great and important subject would be discussed. Since he had been sitting there gentlemen had given notices of motions; he thought he should like to mention the subject of the game laws (applause). This was an important matter, and he knew well that it was a dangerous one. It required to be handled very gently and smoothly. He only hoped it might fall to his lot, if the subject should be discussed, to say nothing that might be held personal, or cause an ill-feeling one between another; but still he did feel, and he knew it was a feeling that was gaining ground, that this question should be discussed at this Chamber. He would, therefore, move that the Chamber should consider "The present state of the Game Laws, their bearing upon the tenant farmers and the agriculture of the country in general." As far as the tenant farmers were concerned they were quite able, if they would do it, to protect their own interest, and he was quite sure there were many outside who were not so immediately connected and interested in the land who felt for them, and were anxious and willing to express their feelings and opinions upon this important subject. He felt, himself, that it would do good—at any rate it would ventilate a principle that required ventilation—and he only hoped and trusted that if it was brought before the meeting that it would be done with every degree of good feeling, and every desire to do good, not only to the tenant farmers, but to the country at large. He would then propose that a motion should be placed upon the paper to consider the present state of the game laws. He would do the best he could.

Mr. R. L. EVERETT seconded the motion, remarking that observations had been made about the Chamber not having brought forward the subject. There would no doubt be two opinions on the question, that a good deal would be said, and that a very interesting evening would be spent in talking over the game laws.

The resolution, as follows, was then unanimously carried:

"That this Chamber should consider the present state of the game laws, and their bearing on tenant farmers, on agriculture, and the country at large."

It was decided that this question should be brought forward on the 12th of April.

Mr. R. L. EVERETT said there was one suggestion he should like to make, viz., that the Central Chamber should arrange a deputation to the Chancellor of the Exchequer, and suggest that a part of the surplus should be given towards a reduction of the malt-tax. There was no doubt but that there would be a large surplus, and he (Mr. Everett) could not see why agriculturists should leave off agitating the question; he could not understand, especially after a report of the House of Commons, why the tax should not be put on a different footing. He thought they, as farmers, would do well to urge the Central Chamber to send a deputation to Mr. Lowe.

Mr. J. M. DAWSON seconded Mr. Everett's proposition, which was agreed to in this form: "That the Central Committee should organize a deputation to wait upon the Chancellor of the Exchequer on the subject of the repeal of the malt-tax, before the introduction of the Budget."

OVER-DOING IT.

At the meeting of the Herefordshire Chamber of Agriculture,

The SECRETARY said a communication had been received from the Central Chamber stating that there would be a meeting of that body in London on the 8th of February to consider "the best mode of providing for the future maintenance of turnpike roads and highways," and requesting this Chamber to send a deputed member to the meeting. On looking through the minutes of the meetings held last year, he found that there had been two discussions upon this subject, and that on the 21st of April the following resolutions were passed: "(1) That the Government be requested to bring in a measure for the total abolition of turnpike gates. (2) That the future repair of turnpike roads be borne with that of the other parish roads by each Highway Board by district rate, and that the same be assisted by grant from the Consolidated Fund. (3) That the debt of any trust be met by rate upon the owners of property." On the 19th of May those resolutions were again brought forward and discussed, and signed by the Chairman. If the resolutions now met the views of the Chamber, it would be desirable to appoint some gentleman to attend the meeting of the Central Chamber on the 8th of February, and he (the Secretary) would furnish him with a copy of the resolutions as expressive of the opinion of this Chamber, unless it was thought advisable to discuss the subject again.

Mr. BIRCH thought it would be quite necessary to do so. He saw that many Chambers had discussed the question again and complained loudly of the Highway Act, and he was sure there was cause of complaint in this district.

Several members were of opinion that as the question had been twice discussed, it would be unnecessary to re-discuss it, and it was decided on a majority of ten to one not to re-open the question.

THE MEETING OF THE ROYAL AGRICULTURAL SOCIETY IN 1871.—At the ordinary monthly meeting of the Shropshire Chamber of Agriculture, in Shrewsbury, Mr. John Bazeley in the chair, the principal business was "To consider what steps should be taken to promote the visit of the Royal Agricultural Society of England to Shrewsbury in 1871." A letter was read from the Town Clerk of Shrewsbury, suggesting a conference between the Corporation and the Chamber. On the motion of General Herbert, it was agreed "That the chairman be requested to write to the Lord Lieutenant of the County, in the name of the Shropshire Chamber of Agriculture, to suggest for his Lordship's consideration the desirableness of calling a county meeting on the 15th inst. (the day of the annual dinner of the Chamber), for the purpose of considering what steps should be taken to ensure the meeting of the Royal Agricultural Society of England "for 1871, being held at Shrewsbury if thought desirable." Also that the Mayor of Shrewsbury have a copy of the above resolution, and that the co-operation of the Town Council be invited in the matter."

It was stated at the dinner of the Herefordshire Chamber, that the discussion of the game evil was fairly, or very unfairly, swamped by the landlords on the Council of the Central Chamber. It is, indeed, now said that an Anti-Game-Law League is about to be formed, whose action in Parliament and elsewhere will be entirely independent of the Chamber of Agriculture. When the cattle disease was rife, it became the business, not of the Central Chamber, but a special Cattle Defence Association, to see to this matter in Parliament; and most likely, when there is anything else to do, "the work will be put out" again.

FARM CAPITAL.

The following paper was read by Mr. J. J. MCHI, at the last meeting of the Framlingham Farmers' Club: Accepting the invitation given to me by your intelligent club to say a few words about agricultural capital, I approach the subject with a full appreciation of the difficulty of removing long-cherished convictions based upon the practice of our forefathers, who were, no doubt, fully entitled to our respect and confidence; but the circumstances under which they lived are now changed, and are still rapidly changing, so that we, as landlords and farmers, must deal with these altered conditions in a commercial spirit, which always adapts itself to the peculiar influences that at the time surround it. Who would have thought in my time, some 60 odd years ago, that the smoke from coal would be made to flow in underground channels, and re-appear, almost magically, in our chambers as a blazing light, sending to the shades the gloomy flickerings of the venerable oil-lamp, with its contemporary dips and moulds. Again, we have no longer to beat about for three weeks within sight of Dublin harbour in the face of an adverse wind, but can now make sure our voyage with almost unerring regularity. Lovers can exchange soft words, and merchants may buy or sell cargoes at lightning speed beneath the broad Atlantic. In fact, in my early days we had no ocean steamers or railways, no gas, no telegraphs or photographs, no penny post, no cabs, omnibuses, or police; but we had to boose over our port wine because the coaches could only accommodate 20 people, who had, in many cases, to book their places a day or two previously, and then to travel at 7 or 8 miles per hour. The new broadsheets of daily news were then puny slips, as cramped as were then our general education and literary opportunities. But mighty steam has changed all this. And we can and must advance at modern not ancient speed. I feel sure that you will agree with me in this view of our changed position, and that both you and your landlords will gradually but surely glide into the profitable stream of steam-driven progress. It is wrong to charge agriculture as especially prejudiced and attached to old customs, for, some two or three centuries ago, our Lord Mayor and Corporation of London petitioned the King to prevent the introduction and consumption of coal, as its smoke created such a nuisance! Now, the supply to the metropolitan district exceeds 5,000,000 of tons annually. Our principal towns once opposed the approach of railways as a nuisance, and have since repented of their folly. Even now there are people who won't believe that the safest place you can live in all your life is constantly travelling in a first-class railway carriage. It is, in my opinion, too much the custom, and a great mistake, to congratulate each other upon improvements that have been made in our agriculture, rather than to lament over that which remains undone, and for which there can be no excuse, seeing that there is no lack of customers for our produce (one-third of our food comes from abroad), and that our overflowing and rapidly increasing capital goes to encourage foreign enterprises, instead of being applied to the increased fertilisation of our soil. The bright examples of agricultural progress which are so frequently brought to public notice in bold relief rest as mere specks upon a most extensive and dark back-ground of bad and imperfect farming. It must be so, or we should produce more per acre than the admitted average of less than £4. Remember that I do not speak of Suffolk, or any particular county, but of the 45 millions of available acres that constitute the agricultural area of the United Kingdom, as returned annually to the Board of Trade. It is not in my nature to despond, rather the contrary; but I consider it a duty to endeavour to awaken public attention to that paramount national question, the means of increasing the food and employment of the people by a profitable and enlarged investment of capital. I am not a believer in large farms, for they are already, most of them, too large by more than one-half for the capital employed both by landlord and tenant. A farm can never be too large where the tenant's capital is £20 per acre, and where the landlord has effected necessary permanent improvements. My own small farm of 170 acres is an illustration of what

should be done—for with a tenant's capital of £16 per acre there has been, for several years, an annual surplus of more than £600, available for rent and profit, after paying every other expense. In this case the landlord (myself) bought the land for £23 per acre, and expended nearly as much in drainage, building, roads, removal of trees and fences, and other improvements, thus raising the rent to 40s. per acre. The time will come when a landowner will be appreciated, not by the number of his acres, but by the amount of his rent-roll, the latter representing a high rate of rent and a well-ordered estate. Steam-power has so multiplied population by affording increased and more profitable manufacturing employment, that we are now no longer in the primitive pastoral period, when the people were few and the acres many. All this is being rapidly reversed:

Year.	Population.	Available. Acres.
In 1800.....	10,000,000	45,000,000
In 1869.....	32,000,000	45,000,000

These thriving and hungry millions who throng our manufacturing districts demand of us agriculturists (I mean landlords and their tenants) a change of practice, and a progressive increase of food more in accordance with the rapidly-enlarging demand for it. A considerable area of land is passing into the hands of manufacturing and commercial millionaires, who, happily, in many cases, bring to bear upon the soil the power of intelligence and capital, unfettered by a previous attachment to antique customs. I consider it a disgrace to us that, wanting 10 million quarters of foreign wheat annually, besides other grain, we permit one-half of our acreage (22,000,000 of acres) to remain in primitive pasturage, producing a minimum of food, and employing a minimum of labour. I know that there is a strong feeling in favour of permanent pasture, but when I see that I can, not infrequently, realize on my poor farm as much as from £15 to £26 per acre in corn and straw, I feel vexed that those 22,000,000 of acres of permanent pasture should be starving the people by producing probably not more than 40s. to 50s. worth of food per acre. I now proceed to inquire, *How much is the Capital of British Agriculture?* I mean the landowners' and tenants' capital? Taking the average of the kingdom, the 45,000,000 of acres returned to the Board of Trade, the landowners' capital would probably be £33 per acre, or £1,500,000,000, besides the value of timber, possibly £30,000,000 more. The average rent is probably 25s. per acre, or about £56,000,000 annually. *The Farmers' Capital can hardly reach £5 per acre, or £227,000,000.* I have taken no account of the mountains, wastes, &c., which are not enumerated in the Board of Trade returns. My estimate of the farmers' capital may appear low to arable farmers, but we must not forget that 22,500,000 acres (half the land) are in permanent pasture, much of it very neglected, and employing little labour or capital. The gross saleable produce I estimate as under £4 per acre, or £189,000,000; probably £3 12s. would be nearer the truth. Additional landowners' capital will be some day required in the matter of town sewage, for on to the land it must ultimately go. Probably it will be dealt with (when landowners can agree) on the principle of the great Fen drainage by Acts of Parliament and local commissioners. The London sewage will be indeed a great affair, for it takes the annual average produce of 20,000 acres, landlord's measure, to feed the population of London for only one day, and about an equal quantity weekly to feed the horses of London. One can judge from this how great must be the daily manurial power and value of the London sewage. Farmers will then have sewer meters (as manufacturers have water meters), and take their supply according to their requirements. If I am asked by landowners where the capital is to come from for necessary improvements, I point to the several land improvement and drainage companies which are overwhelmed with unused capital, seeking for employment in this agricultural channel that remains, as yet, almost unopened to it. Covered yards, cottages, farm-houses, roads, drainage,

&c., may be all effected, even to the extent of £20 to £30 per acre, without any outlay on the part of the landowner, and at a moderate annual charge, divisible in equitable proportions between landowner and tenant, to both of whom it must prove a source of profit, as well as to the nation a boon. When I purchased my poor land in 1841, it cost me £23 per acre. I invested nearly that sum in drainage, roads, and buildings, clearances, and machinery, so that I have to pay myself 40s. per acre annual rent. Last year, 1868, I sold one field of white wheat for £23 per acre, and the straw for an additional £3 10s. My farm capital is £16 per acre, invested as follows on the 31st December last (see details at p. 45 of my book, published recently by Routledge and Co., Ludgate Hill, London):

	£	s.	d.
Live stock	6	10	0
Farm houses	1	1	0
Tillages, manure, &c.	3	15	6
Implements and machinery	2	10	0
Hay, corn, &c., unsold	3	5	0
Per acre	16	1	6

This may appear to you a large sum, especially for live stock and tillages, but I want you to believe that the considerable amount invested in live stock, fed mostly on purchased food, is the very key to my profit, and to those large and frequent crops which many people will hardly credit until they see them. The costly tillages arise from very deep cultivation, and a much larger dose of rich cake and corn manure than is generally administered. It is thus that I grow 40 tons of mangold per acre, as I have done this year; and this, too, accounts for my frequently growing from 6 to 8 quarters of wheat per acre, and on my highly manured clover less two heavy crops of wheat in succession (the second crop rivet wheat). Some of you have on various occasions seen my crops, and can form your own opinions. Although not a good season, my best two fields of white wheat have yielded 6 quarters per acre, and my barley (grown after 6 quarters of white wheat) was thrashed last week, and yielded over 6½ quarters per acre, sold at 38s. per quarter. The quantity of seed wheat drilled was one bushel per acre, and of barley 6 pecks per acre. This has not been a good year for arable land farmers, for the crops vary a good deal, and the price of wheat is now very low. Stock breeders have the best of it this year, for the abundant crops of roots and hay have caused a large demand for their store stock at higher prices. They, however, suffered severely in 1868 from the drought, while the arable farmers prospered, especially on heavy lands. My experience has taught me that on such farms as mine £16 will pay a much better profit on one acre than on two. Poor farms require more manure, and consequently more live stock than rich farms, and, of course, much food must be provided that did not grow on the farm, thus adding to its fertility. Many Norfolk and Lincolnshire farmers have from £20 to £30 per acre capital. They are thus enabled to hold their corn a proper time, keep plenty of stock, and purchase food for it. I could do better than I do now had I £20 to £25 per acre capital; £16 is not enough. I presume, from my knowledge of Suffolk, that its general tenants' capital does not exceed £7 to £8 per acre, and that there is ample room for investment of landlords' capital in drainage, buildings, and other necessary improvements. It is true that you have more grass-land than I have (I have only 1½ acres), but I predict that the introduction of steam cultivation will annually diminish the area of pasture, especially of pasture in heavy land. Steam cultivation will place land in a more favourable position than it has hitherto had. The advantages of ample capital are obvious. You can buy when other people are obliged to sell, and sell when other people are compelled to buy, and can maintain ample stock and machinery. Ample capital sometimes leads farmers to hold their corn when they ought to sell it. As a safe maxim, I would say, always hold wheat at 40s. per quarter, but sell when it is at 60s. I have known of a good deal of money lost by farmers who always hold their corn for a higher price than buyers are willing to give. We see, in consequence, old corn-stacks riddled by rats and mice, and when thrashed, minus the grain. Capital with judgment is an immense power, and only fails when it is overstrained. If I am asked how I would employ additional capital, I reply that our subsoil, im-

mediately below the ploughed soil, is now a mass of undisturbed poverty, unenriched, unmanured, and unfit for the roots of plants; we dare not, in its present unwholesome state, bring it to the surface and bury our top soil; we should, therefore, uncover the subsoil by ridging or ploughing together the top soil, and incorporate with the subsoil an immense quantity of rich manure. To obtain this additional manure, a large capital must be invested in live stock and purchased food. In fact, to farm to the greatest advantage, the soil and subsoil, to the depth of 3 feet, should be well manured; now we only manure the top 5 or 6 inches. Our root and green crops can never be over-manured, for they feed in the deep subsoil when in a fit condition. Market gardeners understand this well; and around the metropolis they easily grow 70 tons of mangol per acre, and other crops in proportion. This system of large capital and highly manuring has an immediate bearing upon the growth of beetroot either for sugar or for distilling. In times to come factories for both purposes will be greatly multiplied. Landowners are very anxious on this point. They say to me, "It is all very well for our tenants to sell off their roots, but how about the restoration of fertility?" My reply is, "Let them farm as they like, provided they invest a capital of £15 to £20 per acre, one-half of it invested in cake-fed live stock." The frequent growth of red clover and swedes is rendered impossible by the absence of manure in the subsoil. Baron Liebig, and the late Rev. Samuel Smith, of Lois Weedon, well understood this. Before free-trade, "Down corn, down horn" was the motto. Since then bread, milk, butter, and cheese have increased in price, and are free from the fluctuations that occasionally, as at present, depress the price of wheat. Let us, therefore, go in for more live stock and more capital. The return of the beet pulp to the soil restores most of its inorganic elements, and they to some extent prevent exhaustion. Live-stock purchased cheaply in July, when feed is scarce, pays well for carrying on with a little cut straw, cake, &c., until the root season commences. Poor land may be almost immediately made fertile by heavily folding with sheep, consuming £10 or £15 worth per acre of cake, corn, hay, roots, &c., not the produce of the land on which the sheep are placed: supposing that there should be a loss even of £3 to £5 per acre, great will be the after gain. This system requires capital; but where there is capital, it is by far cheaper than guano or other artificial. Where my 40 tons of mangol per acre grew this year, the land was autumn-manured with shed manure at the rate of £20 worth of cake, &c., consumed for every acre manured, and some guano in addition. This is what I call capital farming, as well as farming with sufficient capital. It is the true way to make land pay. The land of England is generally not one-third manured. One can never over-cultivate or over-manure, for a root crop especially, when, like mine, it follows two wheat crops, and is followed by another wheat crop. There is no need for landowners to tie down tenants who farm with a capital of £20 to £30 per acre. Their land must improve under such circumstances. Your sugar-beet land should be all richly manured and very deeply cultivated before Christmas, and only scarified and guanoed before sowing in April. This I find is the best plan for mangol. My farm is all arable except 1½ acres of permanent pasture. I have no fence except an external one, and I am very glad to hear that some of your distinguished landowners have realized the propriety of removing many of those fences and pollard trees that disfigure the country and prevent the farmer from deriving the full benefit of his land; for, you know, he has to pay rent for the ground occupied by fences, trees, and their roots, besides suffering a diminution in his crops. A farmer of 600 acres told me the other day that he offered his landlord an extra £100 per annum rent, provided he might clear the ground of those obnoxious and unprofitable obstructions to good tillage. Yet his offer was declined, although the growth of the timber did not come to one-fourth of the proffered annual increase of rent. Now that 30-horse power steam-engines are cultivating 36 acres per day, we shall soon see such clearances as at one time was never anticipated. Saw an implement-maker to me at the show last week, and a farmer declined to buy one of the great traction-engines because his gateways were too narrow. The implement maker wondered, smiled sarcastically, and thought many things—some of which he told me. Remember, that while I advocate ample fields untimbered, I strongly urge the formation of plant-

tions or belts at intervals, not only as shelter, but as breeding places for birds—the farmer's friends. We must remember that as we clear and drain the country we not only produce a drier and warmer climate, but our buildings should be strong enough to resist the gales that will sweep less interruptedly over the country. By the way, speaking of tillage, my dependable friend, the Rev. Mr. C., plumbed the depth of the cultivation at Beesot, near Farringdon, the other day, and found it to be 30 inches. It was done by two of Fowler's 30-horse power engines, and when the land is cross cultivated the depth is to be 3 feet—in preparation for sugar-beet. My shallow-drainage friends may as well take a hint, and consider whether even 4 feet will be deep enough when the 50-horse engines are put to work. We are on the eve of many great changes—your middle-class college, so creditable to Suffolk, is doing much to enlighten the rising generation of agriculturists. The Royal Agricultural College at Cirencester, in which I, many years ago, took a great interest, has now become an established institution, granting diplomas for agricultural efficiency, and sending forth men learned in the theory as well as practice of agriculture. I begin therefore to hope that the pervasion to a lecture which I delivered at Chelmsford in 1853 (seventeen years ago) may soon be in some degree realized, I therefore give it as a conclusion to this long paper, which you have heard so patiently, trusting that I may ultimately be found a true prophet: “I see in perspective a railway activity pervading agriculture. The time is coming when farms will be squared, trees removed, and game moderated; when tramways will intersect estates, and one horse will draw to market the load of four; when the sewage of our towns will ebb back to its original source; when the waters of our rivers and drains will be applied to the irrigation of fields; when our millers will use steam instead of water; when our farmers and their children will be better educated and rank higher in the social scale; when our labourers will be better housed, taught, and fed. Then will the blundering rudeness and clumsiness of ignorance be exchanged for the watchfulness and thought of an enlightened intelligence; then will the fractional calculations of profit outweigh the fears of cost; then will antiquated territorial legalities be superseded by personal responsibility, identity, and possession. I see all this in the distance: it is a mere question of time. I see mighty engines on railwayed open fields, tearing up furrows a yard deep, making the land look like a sea. I see those hungry earthy masses saturated and immediately fertilised with the sewage of towns. I see ample evaporation and facile percolation. Tottering and dilapidated farmhouses will give way to permanent and convenient homesteads; the pinching economy of a parsimonious and pernicious system will be exchanged for liberal views and large operations; capital will develop its giant strength, unfettered by seigniorial restrictions; agriculture, commerce, and manufactures will unite by the ties of a great common interest and common intelligence for the good of our people and for the honour of this great nation.”

Mr. R. GARRARD, Brundish, would like to ask Mr. Mechi how it is possible for a tenant to put £30 an acre upon the land if he has no security for it. He thought Mr. Mechi's estimate of the amount of capital a tenant had invested in the land rather low, and that it was something like £10 or £15 an acre in this district. At present the amount of capital lying in the valuation between incoming and outgoing tenants was very large, but if the tenant were to put three times the amount of capital in the land of course the covenant would be very much higher, and he doubted whether he would see his capital back again.

Mr. G. LING, Bedford, had for a long time thought their friend Mechi was simply a beacon for farmers to beware of, and that opinion was confirmed that night. Mr. Mechi talked to them about putting a lot of capital into the land, but he had seen his own figures to the effect that he gave £35 an acre for the Tiptree Hall farm, and then laid out nearly £50 an acre as landlord's permanent improvements, and then it was to have £30 an acre as tenant's capital, which amounted on to £13,000 on the 160 acres. His profits were £600 a year at the extreme, which was 8 per cent. for his money, including landlord's and tenant's capital, and a man must be a very bad judge of laying out his capital if he could not make it pay more than 5 per cent. The landlord would claim 2½, 3, or some wanted 4 per cent. for his outlay, and if that was paid to the landlord how was the tenant to live? Mr. Mechi was a self-appointed

teacher of farmers—and he had got a lot of very inept pupils. If he (Mr. Ling) wanted information he would prefer to go to a man who farmed 300 acres at say 30s. an acre rent and 10s. more for rates and tithes, and who, he knew, had brought up 8 or 10 children and given them a good education. He always looked on Mr. Mechi as an amateur farmer, which was the same as an amateur runner or sculler—he did not do it for gain. There was no difficulty in making a lot of fat bullocks—it could be done with money, but the question was how about the pay? It was all very well to talk about growing food for the people, but what he (Mr. Ling) said was, “Let us grow food for ourselves first.”

Mr. H. BIRNELL said he had opposed Mr. Mechi as much as any one who had met him as little as he, but he did not term him a self-appointed instructor. He thought Mr. Mechi a very willing adviser, but they were at liberty to take or reject his advice—but they should be very careful to do so in the same kindly and good-tempered manner in which it was given. For his own part, if he were not restricted as to capital, he should examine some of Mr. Mechi's suggestions very closely before he should think himself justified in using capital as he advised. Questions such as those raised in Mr. Mechi's paper could hardly be discussed except on paper, and therefore, they would reserve their judgment on many points. He understood Mr. Mechi to say that the employment of more capital would answer better on poor land than good land. Now between Wilford Bridge and Oxford quay was a large quantity of very poor land worth perhaps 7s. an acre, and he would ask whether it would pay better to put £15 or £20 an acre capital on that land than on such land as they would find in a circuit of a mile and a half round Framlingham Castle, the rent of which would be 37s. an acre. His own opinion was that if this great capital were used, the better the land that it was used on the better return would be obtained. It was quite true that many things which Mr. Mechi told them years ago had been accomplished, but he did not doubt on many, which he once thought quite as necessary, extended experience had led him to alter his mind.

Mr. MECHI: No.

Mr. BIRNELL said then Mr. Mechi was more fortunate than most men who could see further than their fellows.

Mr. MECHI hoped some gentleman would say what he thought was a sufficient tenant's capital in Suffolk.

Mr. LING said about here it was generally thought that a man who farmed his land best with the least money was the best farmer. The man who made a little money go a long way was the best. The tenant's capital in this district might be set at about £10 an acre on the average.

Mr. MECHI wished some gentlemen to speak about deep cultivation.

Mr. G. GOODWIN said Mr. Mechi said the natural result of the application of steam to agriculture would be to reduce the amount of pasture, and he based that assertion on the statement that he could produce a much larger amount of food from cultivated arable than from the pastures. He (Mr. Goodwin) did not deny that, but they must look to their balance-sheet for the results. Mr. Mechi said that with the pastures but a small amount of labour was required. Now, labour was a very serious item in their expenditure, amounting to from 30s. to 40s. an acre. At the present time stock brought more remunerative prices than some cereal crops, and it became a serious question whether it was desirable to continue to reduce the amount of pasture land at the ratio which had up to the present prevailed, for it was by means of the pastures that stock was kept. Another effect of Mr. Mechi's proposal would be to sweep away altogether an immense mass of men now engaged in agriculture, and the result would be that the competition for occupations would be much less and the landlords would not get such high rents; and he must confess he regarded it as a thing to be contemplated with much seriousness when it would put *hors de combat* a fourth or a third of the present tenantry of the kingdom. Twenty or thirty pounds an acre was a formidable amount to invest in an occupation. Mr. Garrard had said the valuation paid by the incoming tenant is so much capital lying dead instead of being lively; and if more capital were put in the land of course the valuation would be heavier. Mr. Mechi contemplated getting rid of all fences and trees and substituting steam for the present source of labour. By so doing he would, of course, sweep off the horses and men too, for he told them one man could work

an engine of 30 or 50 horse-power, whereas it would take 25 men to work 50 horses. Then what an enormous amount of capital would be sunk in these engines.

Mr. MECCHI said the pair of 30-horse engines to which he had alluded with the tackle cost £4,500, and they were doing cultivation 10 inches deep at 2s. 6d. an acre, after paying interest on the outlay. These enormous engines were used as a matter of economy, and it was considered that 50-horse-power engines would be cheaper than 30.

Mr. GOODWYN did not suppose any one in this neighbourhood had any experience of cultivating two or three feet deep, but some years ago sub-soiling was the fashion on poor lands, and in some of them the result seemed to be that all fertilizing power was done away with for several years. He supposed Mr. Mechi would accompany this with heavy manuring, and it seemed to him almost impossible to make manure enough for that.

Mr. MECCHI: Not with the present amount of capital in live stock.

Mr. GOODWYN said Mr. Mechi spoke of keeping more stock per acre, and yet he sold the straw off the farm. Then he did not mix the manure the animals made with straw?

Mr. MECCHI said when under the boards he did not.

Mr. GOODWYN said at present the difficulty was to find straw enough. He knew Mr. Mechi would turn round and tell him that he should cover the yards; but Mr. Mechi should tell the landlords to do that.

Mr. D. SMITH (Parham) asked Mr. Mechi if he considered a bushel of wheat and six pecks of barley the maximum amount of seed per acre.

Mr. MECCHI said he did, except when sown very late on light land, and then he sometimes went to five pecks of wheat; but five-sixths of his wheat was sown with a bushel, and barley invariably with six pecks.

Mr. SMITH asked whether Mr. Mechi could keep cattle cheaper on arable land than on permanent pasture?

Mr. P. READ (Framlingham) argued that closely connected with the question of agricultural capital was that of labour, and asked if labour was unenlightened and unskilful, what was the use of their capital? He urged the necessity for a better system of education, and as an illustration of the necessity, said if an agricultural labourer came to his shop and had to pull off a glove, the operation took him a quarter of an hour, whilst the tradesman stood looking on, whilst if he wanted a boot-lace and had to take off a boot, a good half-hour was wasted. Education would make them quicker, and without it we should be left in the rear by other European countries. He would like to ask Mr. Mechi how many men he would think it advisable to have on a hundred acres of land, what wages he paid them, and whether he liked an intelligent or a stupid man best. Because there were farmers in this district who positively preferred stupid labourers.

Mr. MECCHI said he paid ordinary labourers 10s. and horse-men 11s. a week, but almost all his work was done by the piece, and a man earned about £35 a year.

Mr. READ said that was about £5 a year more than they made here ["No, no"]. He would take it 10s. a week and the harvest.

Mr. MECCHI said his men earned about £6 for their harvest, and beer worth about 15s. besides. They had to cut the wheat and see it on the stack at 11s. 6d. an acre, and most of his crop was wheat, and at that rate they earned the £6 in about a month.

Mr. READ contended that the present scale of wages was insufficient to maintain labourers so as to enable them to do a good day's work and educate their children.

Mr. CORRANCE, M.P. (President) said if the whole of the appliances Mr. Mechi had mentioned were brought to bear the tenant's capital would not be less than £40 an acre, and he wanted to see how far that view was borne out. Whether it was practice was a totally different thing. Theory must precede practice, and the one unanswerable argument against putting that amount of capital in the land was that they had not got it. It would, however, be useful to see whether the possibility existed for the appliance of that amount of capital if they had it, and with that object he would follow Mr. Mechi through a few of his statements. He agreed that capital goes abroad to increase the profits of foreigners and employ foreign labourers in competition with us when we buy foreign produce. Mr. Mechi further said this was a pity, because not more than

£4 or £5 per acre was employed on the average on the land under cultivation, and that statement was borne out by the estimate of M. Laverne in 1854, which was £3 7s. per acre, half the land being pasture. This miserable sum might bring something back; and from a series of calculations he had made he had come to the conclusion that £4 capital per acre would bring a return of not more than 5 per cent., and he defied them to make more. That was, supposing the farm contained 100 acres and the capital was £400, they would get the not very adequate remuneration of £20. If they had £600, and the per-centage were the same, they would get £36—not a labourer's wages—and if £1,000 the profit would be £50. Mr. Mechi said they might go to £15, £20, or £25 an acre. Now, to apply the test. He had assumed that the return would be 5 per cent. whatever the amount of capital employed, but he had come to the conclusion that under circumstances as at present existing, without the large supply of town manure, without the assistance of landlords in the way of covered yards and the other improvements Mr. Mechi advocated, £15 per acre might, under the best possible management, produce 15 per cent. profit. That was the maximum he thought could be obtained under the present circumstances, and if they employed a greater capital they would find the profit would be diminished, and with £20 an acre they could not get more than 10 per cent., and with £25 an acre they would go down to 7 or 5 per cent. Applying this to a farm of 100 acres with £500 employed, the profit would be £25; with £1,000 capital it would be, at 10 per cent., £100; with £1,500, at 15 per cent., £225; with £2,000 they had passed the maximum and found the scale descending, and would only get 10 per cent., or £200; and with £2,500 they would only get 5 per cent., or £75.

Mr. MECCHI: How are you going to crop it?

The PRESIDENT: I am taking it under existing conditions, without all this additional artificial manure and buildings.

Mr. MECCHI: I cannot deal with the existing conditions.

The PRESIDENT said he did not say Mr. Mechi could, and this calculation did not controvert Mr. Mechi's position under the circumstances he wished to bring about. Mr. Mechi told them he had £16 per acre capital, and that it produced a sufficient per-centage.

Mr. MECCHI said he first allowed 40s. an acre rent, and then had an average profit of 12½ per cent., it being sometimes 8 and sometimes 15.

Mr. CORRANCE then referred to the question of breaking up the pastures, the policy of which he questioned until both landlord and tenant had the capital, reminding them that farms with a fair amount of pasture were most sought after, and that every acre of grass which is broken up made more capital and more labour a necessity. Their grass might be very poor, and badly treated, but it was an immense accommodation. As to the description of land to which more capital might be most advantageously applied, he thought the poor clay lands could so be improved in a greater ratio than others. The next question was, where the additional capital is to come from, and why landlords would not take the money which the Land Drainage Companies would lead on such easy terms? The deficiency of capital arose first from the fact that the farming class, as a class, were not wealthy. A commercial man with money hesitated about taking a farm, knowing that he will lose a great deal of money before he can get an adequate result. The main reason rested on the principle of political economy—that capital will go where it meets an adequate return and where the conditions are favourable to its employment. What would produce these favourable conditions? High profits, low taxation good security. A man with a thousand pounds would not put it into a business in which a very moderate profit of 8, 9, or 10 per cent. was made and he was exposed to an enormous burden of taxation, some special and some general; the local burdens alone falling on landlord and tenant amounting to no less than £57 15s. 10d. on every hundred acres. If a man had a sum in the funds at 3, 4, or 5 per cent. would he put it into farming, where the profits would not be greater and he would have to pay such heavy rates? He would say, "No, I will employ my capital in brewing or some other trade, for why should I make it subject to such a tax?" Then, another reason was the low security. This brought him to the question of leases and agreements. His idea of security was that the tenant should not invest any capital at all over which his landlord could have any absolute command. It was monstrous that

a tenant on a yearly hire or short tenancy should bring in capital to be subject to the will of any other man. It seemed monstrous to him in these commercial days, though it did not twenty years back, when the state of things was more of a patriarchal nature, and they occasionally heard of a landlord at Christmas retaining his rent to a tenant who had been unfortunate, but they did not hear of that now. They stood on other relations altogether—business relations—and those relations ought to rest on a sound and solid foundation, and his conclusion was that all permanent improvements, such as farm buildings, &c., ought to be absolutely done by the landlord, if his capital permit, or if the security he could offer permit, for though he had not always capital, credit was equally good. It we could remove all the capital that the tenant has invested, not only here but in Ireland, on the security simply of good faith, and put it on the landlord's back, we could stand on thoroughly sound relations. To give the tenant adequate security for the capital he would invest he would always give him four years to prepare to leave the occupation. That was the form of agreement that had been adopted on his father's estate, and if the tenant could see a good four years before him, to get a fresh occupation and prepare to leave that which he then held, he thought they would agree with him that there would be no necessity to talk about fixity of tenure or any such nonsense. There had been a total want of knowledge on this subject. He contended that if a landlord allowed a tenant to lay out £1,000 in permanent improvements on the estate he really alienated from himself a portion of the fee simple. Customs of the country had done a good work and were of enormous use, but only until the two parties could come to fair business-like working relations with each other. In conclusion he asked Mr. Mechi what inducement they could offer to bring capital out of the coffers of the wealthy men to be employed in the cultivation of the land?

Mr. BIDDALL said the president told them that the profits of farming ranged from 5 to 15 per cent., according to the amount of capital invested, and then he said that capitalists would not take money out of the banks or the funds where they got 2½ to 3 or 4 per cent. to put it in the land, because of the taxation. He (Mr. Biddell) thought if the commercial man knew he could make 10 per cent. of his money he would not be frightened by the taxation cry into letting it remain where it returned only 2½ or 3. Why did not capitalists come and invest their money in farming? Because they did not believe that it paid—they knew better, that was the reason.

Mr. MECCHI, in reply, said the real point at issue is whether it would be better in his case to put his £16 on one acre or two. He had arrived at the conclusion, from his experience, that the £16 will pay a better per centage on one acre than on two of his land, and he went further and said if he had £5 an acre more he could do better than now—he could buy his cattle and sell his corn when it suited best, could keep more stock, make more manure, and grow greater crops. Now, there was one difference between him and many of them. His landlord—and he always spoke kindly of him, for it was himself—(laughter) had done what the President said he ought. He had made the conditions favourable to the employment of capital. That was the most important word the President had said that evening. His (Mr. Mechi's) conditions were favourable for the employment of capital. Was that so as a rule? He said it was not. They were shut in by fences and trees, they had not covered yards in many cases, and many appliances were wanting, and he therefore asserted that the landlords had not put the land in a condition favourable to the employment of capital. His landlord had, and he paid him the fair interest of 4 per cent. or 40s. per acre instead of the 20s., which was about what it was worth before the farm was improved. They must compare the conditions as well as the operations, and he said if he had £16 an acre invested in their land he could not derive the same profit he did from his own, though he paid the higher rent for the improved conditions; and if he had to pay the diminished rent for his own land in its former unimproved state, he could not make the per centage he did now on his £16. Let us hope the time will come when landlords will think it right to put the land into this condition by their own capital, or that which they can get elsewhere. It was admitted that the average produce per acre was from £3 10s. to £4. That was unsatisfactory, and arose in a great

degree from what Mr. Goodwyn commended so much—poor grass-land, which was not estimated to produce more than from 40s. to 45s. per acre. It was said that grass-land required little labour, but the question was whether, if that land was broken up and farmed with a large capital, the return, after payment of the expenses in produce and profit, would not be greater than now. His experience was greatly in favour of arable land.

The PRESIDENT: Where is the capital to come from?

Mr. MECCHI would say to both landlord and tenant if they take 200 acres instead of 400 they would double the capital per acre directly. If a man with 200 acres would be content to take 100 with the same capital he now employs on 200 he would be much better off, and the same may be said of the landlord. Half the land in the kingdom is unimproved, and if they had less it would be better both for the tenants and the country generally. He reminded them that this was no longer a pastoral age. If he had all his land under pasture he might put all the capital he could on it but could not make it pay him. He knew pasture is acceptable because it employs very little labour and requires very little capital.

The PRESIDENT: What would you breed?

Mr. MECCHI: Where I can grow great crops of tares, and roots and other food. Never mind if you can give them plenty of food and air and not too much exercise.

The PRESIDENT: Can you breed in yards without grass?

Mr. MECCHI: To be sure; I have 30 calves a year.

Mr. BIDDALL: Where do the calves come from? (laughter.)

Mr. MECCHI: From the cows, of course (much laughter.)

Mr. BIDDALL: Where do the cows live?

Mr. MECCHI said it was not necessary to have pasture. Give the animals plenty of corn and cake and clover hay and so on, and they would produce as good animals as any one—in fact, he believed the best animals were not those produced on poor grass land, but as he had mentioned. He then alluded to restrictions, asking whether they thought if he had been tied down to a particular rotation suitable only to a small capital that he could put a large capital on the land with advantage? When they produced an enormous quantity of manure by the employment of large capital they produced large crops of roots, &c., which they could sell off the farm, but under their present conditions they could not sell those crops without diminishing the fertility of the land. Mr. Goodwyn professed a very great deal of feeling for the labourer, but he (Mr. Mechi) did not believe in it. Of course, Mr. Goodwyn had a kind feeling for the men in his employ, but if he could do with one-fourth of the number he would without a moment's hesitation.

Mr. GOODWYN: Of course I should.

Mr. MECCHI said: Then what became of the cry, "What are the labourers to do?" The farmers had to look to the cheapest way in which they could raise their produce. They had the natural and proper kind feeling towards the labourers they must of necessity employ, paid them according to the market, looked to their welfare, education, and so on; but don't tell him (Mr. Mechi) that they were afraid of not having employment for their labourers. What they wanted was to reduce the amount of labour (Hear, hear). The same was the case with horses. They had no love for their horses if they could supersede them by a cheaper power. If they now proposed to a manufacturer to put horses in a wheel to drive his machinery instead of steam, he would think they had gone back a hundred years, when a man wore his breeches three years instead of having a new pair every six months (laughter). The landlords had not according to modern principles done their duty. It was a failing on their part rather than a fault; but steam was changing all that, and he anticipated the time when there would be freedom of action and security of investment on the part of the tenant such as now existed to a great extent in Scotland. What had made Scotland, but nineteen years' leases and freedom of action? (Hear, hear). A Scotchman, if he could raise a good crop of potatoes, and it would pay him to send them to the London market, did so. The great point was that a tenant must not reduce the fertility of the soil below what it was when he took the land, and if his action is to increase rather than diminish it, he ought to be as free as air to produce that which is suitable to the requirements of the population. He treated all his farming transactions as a matter of business, and he said that it paid him best to raise 40 tons of mangold on one acre with one ploughing, one rent

rates, taxes, seeding, &c., than to grow the same quantity on two acres with these expenses doubled. Mr. Knatchbull told him he had seen 68 tons of mangold to the acre.

Rev. H. E. KNATCHBULL said he saw, at the Smithfield show, a sample of mangold certified to be part of a crop that weighed 100 tons to the acre. On inquiry he found the acre was an Irish one, which gave 66 tons to the English acre.

Mr. GOODWIN said Mr. Mechi misunderstood what he said about the labourers. He said breaking up the pasture would increase the demand for labour. As a matter of business he should reduce his farming to the least expense. He proposed a vote of thanks to Mr. Mechi.

Mr. MENCHI proposed a similar compliment to the President, and the meeting ended.

MIXED HUSBANDRY.

At a meeting of the Ballymahon Farmers' Club, the Hon. L. H. King Harman, President of the Club, in the Chair, Mr. John LUNEM said:—Mixed husbandry is what I have selected to bring before you in this paper, and as the notice I had for writing it was very short, and my time limited, my thoughts on the subject are expressed in a very cursory way. 1st., Is mixed husbandry necessary in good farming? I would answer in the affirmative, and say it is necessary. It is a fact patent to all that the population of Ireland is becoming less every year, and multitudes of the labouring classes are leaving our shores and seeking employment in other countries. By some this is considered a good omen for Ireland, by others bad. I confess I cannot see it to be a good omen to know that so many of Ireland's bravest sons should be driven from their native country to seek a home and employment in a foreign land; and whatever may be the causes at work to produce this sad effect, one cause must be apparent to all—want of mixed husbandry. It is said by many experienced farmers that tillage will not pay, and in many instances it is true, when it is carried on too extensively or in an injudicious manner; but the want of tillage has tended very much to the driving away from our country the labouring classes. In some of the counties of Ireland men are only employed to put in and take out the crops, and then during the winter months the same men are dismissed, having nothing to live on, and the consequence is a prolonged existence of misery, or else quit the country for one where they will have permanent employment. Mixed husbandry will give constant work to a certain number on a farm, whereas on large grass farms only a herd is employed, and the number of families who might be comfortably supported as labourers on this farm, must seek a home elsewhere. A happy combination of tillage with pasture creates employment and tends to keep the country from being depopulated. In travelling over many parts of the country one cannot but admire the rich pastures of the greenisle, with plentiful woodlands for shelter; yet whilst such scenery calls forth admiration, it produces in a reflective mind melancholy, to see nothing but cattle as the inhabitants of those places which the great Creator designed for human beings. It has been said by some competent authors that Ireland has abundant resources in the soil, if properly developed, to maintain eight millions of people; but whether such a number could be supported in comfort or not, we will not venture an opinion. On this, however, is certain, that mixed husbandry would support many more, and leave the farmer more happy and independent. Mixed husbandry is necessary for the judicious management of the farm. It is true that there are some farms so rich in pasture that to break them would be a mistake; but the large proportion of farms, especially where there is a limestone bottom, gather moss and completely choke the grasses. Top-dressing with lime compost or limestone gravel will do much to remove it for a while; but there is no effective cure but to break it, until the moss is completely rotted, and then lay it down again in good condition with best grasses. And this young sole will suit well for sheep pasture, as the grasses are much sweeter and more nutritious than the old ones. Some portions of the farm may not be adapted to pasture, but suit pretty well for tillage; and to keep such in pasture would be a great loss to the farmer. Large tracts of Ulster, for example, must be tilled, as the soil is not naturally adapted to grass, and large tracts even of our own country will not produce grass in such a measure as would warrant the occupier to adopt such as remunerative farming. Land that will not produce pasture should be tilled with such a rotation of crops as are suited to the subsoil, and mossy land should not be broken until the sod is rotted. In this way, if the land is well drained, it will be made to yield its increase,

and give comfort to employer and employed. Mixed husbandry is necessary for bringing to profit the stock on the farm. If a proper rotation of crops be observed it will give ample support to the whole stock of the farm. "I have a farm of very medium quality," said a good farmer once to me; "but yet I sell all fat in Dublin market, and rear all." Now, to follow this system, which I hold is a most profitable one, it is necessary to have mixed husbandry. On most farms the rearing of young stock is necessary, as the pastures are not rich enough to fatten, and if the young stock are to be kept until they pay well, there must be a sufficiency of food raised to support them. Turnips, mangels, cabbage, beans, carrots, flaxbolls, and oats are necessary to bring them to maturity for the market, and unless they are well fed they will not pay. A farmer in Ulster on a farm of eighty acres told me his soil was naturally poor, but he reared young stock and fed them every winter upon a little turnips and straw, with a small quantity of bruised oats mixed with flax bolls, until they were of age to fatten, and that every winter he had the number in the stalls that he reared, and although his farm was what might be called a high rent, yet by mixed husbandry upon it he was able to live comfortably and save nearly £100 per annum. Had he sold his young stock before they came to maturity he said he could have done nothing like save so much—that he would have had a hard struggle to make his rent. Mixed husbandry is necessary to realize the full amount of profit which the farm properly managed will yield in accordance with the state of the markets. Every year the variety of farm produce is varying, some portions of it will be high, some low, and thus the farmer always catches good prices for some of the produce; whereas if he is wholly dependent upon one kind of crop or stock he may be disappointed. A little sold of everything makes muckle, and if one thing does not pay, another will. Let there be as great a variety of crops as possible, but all of a real marketable value, and this in skilful hands will increase rotation of cropping, which will be good for the land. Keep down the weeds, and take out of the manure all the ingredients, so that none of them may be dormant in the earth. It will tend, we believe, on medium-sized farms and on small ones, more than any other system, to increase the purse. I have seen the large flowing river with its broad sheet of water emptying itself into the ocean, and how did it come to be so large. Trace it to its source and you will find that small—perhaps a spring, and the question arises, How came it to be so large? namely, by the tributaries poured into it. It is large from many sources. So we hold that tributaries from mixed husbandry swell the whole, and make the little a muckle. Let there be a proper system of pig feeding, cattle feeding, dairy farming, with a sufficiency of crops grown to support all, and some for the market. The result will be success and prosperity. Some may say all this appears very well on paper, but it is a different thing to carry it out. To such we say that every great discovery in science and art appeared first on paper. The steam engine appeared first in its plan upon paper; the great discovery of the telegraph, which now tends to the concentration of the whole earth, appeared first on paper, and so must all improvements in farming appear on paper. A proper plan, a good system, is more than half the success. A thing well begun is more than half finished; so with this system of farming. But a mixed system of husbandry is necessary to make a man a good farmer. His mind should be trained well in every department of agriculture, and when he begins to cultivate a variety of crops, he will get as much knowledge as possible about each species of crops, and that will lead him to read, inquire, and investigate until he has succeeded, and in his success he will carry on his investigation.

tions, in order to improve, knowing that there is no end to discoveries and improvements. This training is most useful to his own mind, adds happiness to him in his industry, and comfort in his prosperity. If the mind is only fixed upon one kind of farming, the training that it would otherwise have will be neglected; but if he cultivates a variety of farm produce, the mind will be upon the stretch to make the best of it. Mixed husbandry is necessary to suit the variety of soils on the same farm. There is frequently a great variety of soil and subsoil; one part is better adapted to one kind of crop than another, and thus, by the skilful adaptation of crop to soil and soil to crop, there is a more abundant supply. In the study of nature we find nothing but variety, and mankind is so formed that they live upon variety, and are made happy by variety. The eye is adapted to variety, and feasted with variety; we live upon variety, and the earth is made to yield this variety. In advocating mixed husbandry, we are only accommodating ourselves to nature, and endeavouring to produce that variety which nature has taught us to produce, and without which mankind could not live or be happy. Variety is a necessity of our nature, and there is a beautiful adaptation of the earth to this variety. As we study to be like nature and imitate nature, so do we become beautiful, profitable, and industrious; for nature is not only clothed with beauty, but it is both exceedingly profitable and industrious. Mixed husbandry is nature's imitation, excites to industry, and, as we shall try to show, is really profitable. It is a good maxim to learn well in all departments of business the arithmetic of profit and loss, and we agriculturists should ever keep this rule before us, as it ought to be the aim of every farmer to make everything pay. Farming for amusement and ornament may pay those who engage in it in a rich return of health, knowledge, and pleasure, but not in money. It is money that most farmers want, and the question is, will mixed husbandry yield that. On this subject there is, no doubt, a great variety of sentiment, and almost every man forms his own opinion from his experience; but an opinion to be correct and influential must be founded on intelligent experience. In trying to show the necessity for this system of farming, we have hinted that it will pay; everything necessary pays, and if it be admitted to be a necessity on most farms, then it must pay better than any other system. Will it pay to bring stock to perfection, and turn them out in good condition to the fairs? Then such cannot be done on medium quality of land without feeding materials grown on the farm. Will it pay to have a variety of produce in the market, even though that should be small? Then the judicious system of cropping produces that. Much of the disappointment to farmers arises from the necessity of being compelled to sell their stock in a poor condition; and this is owing as much to their injudicious method of feeding as to the want of capital. If there be a bad system of tillage on the farm, there will be a lack of feeding materials, and the stock is either starved or half-fed, and the result is always small prices. I have observed when small farmers are taking one-acre, and always making large quantities of manure to raise crops of their farms, that most generally these men are prosperous. On small farms no other system will pay than mixed husbandry. The northern farmers are compelled from the poverty of the soil, as well as from long custom, to carry out this system, and it is generally admitted by all parties who know Ulster that the farmers there are much more independent and have more money and capital than in some of the other more favoured provinces. Besides the emigration from Ulster has not been anything equal to that from the other provinces; and this arises from the variety of employment for the labouring classes, and the remunerative wages they get for their work. Some time ago in the south of Ireland there were twenty labourers for one farmer; now it is twenty farmers for one labourer. Many causes may have been at work to produce this change, but one cause is patent—want of regular employment and fair wages all the year round. It may be objected to the mixed system of husbandry, labourers cannot now be obtained; but if machinery were introduced more largely, and a good pair of horses could be kept at work during the entire year, under a skilful man, a large amount of cropping could be carried out with comparatively few labourers. The scarcity of labour necessitates the introduction of machinery, and in a very short time farmers will save as much from hand labour as would purchase the necessary machines. Thus by machinery in part and doing as much as possible by horse

work, enough of cropping could be done on most farms, sufficient for all purposes of feeding, rearing, and some to sell. By skilful management much labour might be saved which is now on many farms expended for naught. Seasonable work seldom or ever expends labour, and one reason why tillage will not pay many is the consequence of the unreasonableness of it. I have seen the ploughing commenced on a farm of considerable dimensions when it was nearly the time to sow, and thus every species of crop was shunted back to meet the farmer's convenience; bad crops, as might be expected, was the result, and the farmer was always saying tillage will not pay. Another reason why it does not pay, many have the system of employing labourers, instead of keeping a few constant men at work, giving them comfortable little houses and gardens, so that they may take a deeper interest in their employer's work; a number of workers are engaged to put in and take out the crops at high wages, and then dismissed. This system is bad, and always disappoints. A writer on mixed husbandry asks the question, Will it pay to raise from 30 to 60 tons of turnips to the acre? Why, even to sell an acre of 40 tons at 10d. per cwt, would amount to the sum of £33, and all the other crops if properly grown would pay in proportion; but used for stall feeding and rearing stock they pay much more, as the manure is very valuable for the land. The consumption of a large portion of crops upon the farm is always wise, as it leaves the manure behind; the land requires to be stall-fed as well as the cattle in order to pay, and the cleaner it is kept with good feeding the better the pay. Unskilful husbandry will not pay, but we affirm without fear of contradiction, and our opinion is founded upon the experience of more competent men, that mixed husbandry, unless on very rich pasture, is the best farming in order to pay both farmer and labourer. It would be unwise to say what proportion of the farm should be tilled, as that depends very much upon the nature of the soil, drainage, markets, &c.; but the system I advocate must be guided by experience. I know the popular motto in agriculture at the present time is "Till little and graze all," but grazing all on small or medium sized farms would not pay. The necessities of agriculture as a branch of industry, the clear tendencies of economised science, and the growing education of many farmers will lead them to see that mixed husbandry is not only profitable, but required. Instead of driving away the people from the country, we want to establish branches of industry to entice them to stay; and instead of having merely one resource out of which to draw the revenue, the farmer, we consider, will be richer and more independent to have many resources. Whatever tends to industry tends to wealth and comfort, and this system, if properly carried out, will have that effect.

Thus then we say—

Mixed husbandry is the thing that should be—
Not too much, nor too little, but all to agree,
The farm well divided by labour and skill
Looks rich in its pastures, with no weeds to kill.

Emigration has ceased, for the men are at work,
And the farmer is active, and able to talk
About his cattle, pigs, sheep, the best of good stock,
All fed on produce, with a little salt rock.

The markets have risen, and he has something to spare
To catch the good penny and go the fare.
He buys some of clean stock, on his turnips to feed,
And says to himself, I will not be in need.

My neighbours may laugh. Oh, it's all very well;
But with mixed husbandry I am sure to excel.
These cattle, well fed to the first week in May,
In Dublin's good market are quite sure to pay.

Let all who object to this system first try,
For once in their life, and not be too shy,
By labour and skill they are sure to outrun
The timid in life, who are still overcome.

"Be men," said the general; "we'll fight it right out,
By gun and good bayonet we'll drive them all out."
By spade, plough, and harrow, the farmer should try
What benefit he'll have in his mixed husbandry.

THE GAME LAWS.

At the last meeting of the Devon Central Chamber of Agriculture, at Newton Abbot, Mr. C. J. Wade, the president, read the following paper :

Game and the Game Laws are questions occupying the attention of not only the landlord and tenant, but the whole community, and they will be found, on a careful and thorough examination, deservedly to do so. Chambers of Commerce, as well as Chambers of Agriculture, should take up the subject. It has antiquity on its side, and is a relic of the "good old days," and the numerous and various Acts which have been passed relating to it would, if collected, form a large volume, and some of them would be considered as curious specimens of a bygone age. About the year 1390, in the thirteenth year of Richard II., we find an Act relating to "such persons as should not have or keep any greyhounds hound, or other dog to hunt, and should not use fyrcles, keps, nets, hare-pipes, cords, or other engines, to take or destroy hares, conies, or other gentleman's game." And subsequently in 1492, in the seventh year of Henry VII., an Act was passed "against taking *feavants* and *partridges*." In nearly every reign legislation took place, from "hare pipes" to "taking hares in the snow." The mere fact of so many statutes being from time to time passed conclusively shows systematic opposition to or dissatisfaction with the game laws. There appears to have been a spirit of unrest respecting them. It will be our duty on the present occasion to consider, without prejudice on the one hand, or partiality on the other, some of the results of the game laws, and of the repugnance to them. We hear it said with regard to game—"that a merciful Creator" sent game as well for the poor as for the rich. How many are satisfied with this statement, without considering that the observation applies to all God's gifts! and how comes it, that so many persons are to be found, who are called respectable, and yet sympathise with the detected poacher? and these same persons, or of that class, do not hesitate to purchase game which may have been surreptitiously killed? and yet they would feel horrified at the mere thought of purchasing goods obtained contrary to and in breach of the laws? The fact that such sympathy does exist cannot be denied, and how few there are who take the trouble to inquire *why* it is so. By the common law, which, in this respect, is consistent with, and the exponent of, the natural law, tame animals were the subject-matter of property, and a man could bring his action in respect thereof. But wild animals were not so considered, and no person could have property therein unless they were tamed or reclaimed by him. Hence it appears that by the common law every man had an equal right to such creatures as were not naturally under the power of man, and that the mere capture or seizure created a property in them. The common law being as I have stated, it is clear that the whole of the laws for the preservation of game now in force, or which have been in past ages, are the creatures of statute, and it is because these Acts are looked on with disfavour, not merely by the poacher, but by his sympathisers, that the notion has become prevalent that there is no moral offence in their breach, forgetting that, were each individual to break every law which he disapproved, or deemed to be oppressive or unjust, there would soon be produced chaotic confusion in every community. If laws are bad, we ought to endeavour, by every legitimate mode, to get them altered, but, as good citizens, we are bound to obey them so long as they continue. By the present statute law "all game belongs to the tenant or occupier unless the landlord has expressly reserved the right thereto," and in further considering the subject we may dismiss, to a great extent, although not entirely, those cases where the tenant or occupier has the right to the game: although we may dismiss it to a great extent, still there is the question *where* game is excessively preserved so as to induce a breach of the law. The cases where it is reserved, and preserved in excess, either by the landlord or his lessee, are those cases which affect, not only the tenant by the destruction of, and injury to, his crops, but also the general public by the withdrawal from taxation, local and imperial,

of the value of the crops so destroyed or injured. It is an anomaly, and a gross injustice, that if the tenant or occupier has the game, or the right to kill the game, he is taxed locally and imperially; but if his landlord reserves such right and keeps it himself, or lets it to another person other than the tenant of the land, there is a withdrawal from all taxation, local and imperial. This directly affects, not merely the landlord and the tenant, but the public also. It is the class where there is excess of game kept by the landlord or by his tenant which affects the tenant of the land; he is debarred from expending as much as he would otherwise do, and in these days of progress and agricultural improvement, *he is bound to do, if he keeps his ground, because he does not know "if he shall reap as well as sow."* It is to this class (of excessive preservation) also we are indebted for "the keeper;" and do not for one moment think I am going to condemn this class absolutely, for I have known some as good and honest men amongst them as in any other class of her Majesty's subjects. And I have known and heard of some quite different—men who, by the temptations held out to them, have sold and disposed of that game which they were paid to preserve; and if a keeper will not hesitate to sell the game, he will not be over-scrupulous in trying to place the blame on others; and the tenant is made to bear the burden of the keeper's default. There is also another evil (and I have known cases of this class too), where a tenant has destroyed the young rabbits, thus touching the keeper's perquisite, and so sure as he does this the quiet whispering to the lord takes place, which is destructive of that confidence which should exist between him and his tenant. If the rabbits in every case were to be allowed to the tenant, and no other game kept to excess, I fully believe that the landlords would have plenty of true and genuine sport, and there would be a better feeling existing; there would be no withdrawal from taxation; offences against the Game Laws would be few; the trespass on the tenant's land would be less; the tenant would be proud in welcoming his landlord to a good day's sport; and the sympathy with the poacher would cease. We look on the agrarian crimes in Ireland with horror, and count the murders committed by the assassin; and yet we do not count the murders and murderous attacks in England; and what is the cause of the same? I fear that drink, and the false opinion I have referred to, and the sympathy with the poacher, and the temptation of excessive preservation of game, are amongst the chief causes. There are those (and I regret to have read the other day the name of a clergyman amongst the number) who say if landlords were not to have the game and sporting, they would leave their estates and rush into towns and to the Continent. I think this is a low estimate of the landlords of Great Britain; they, as a class, are ready to perform, and do perform, the duties as well as enjoy the rights of property, and I hope the day is far distant when we shall have to look on the landlords as an absentee class. They are quite alive to the truth that property is for the benefit of a nation, and the schools and acts and works of kindness and charity, all helped on and aided by landlords, bear ample testimony to my assertion, and to the contradiction of the threat I have referred to having any base. There are also those who say, "Let there be a valuation of the injury done." To this I make answer, it is almost impossible to tell the daily consumption of rabbits. We can appreciate the loss of the corn crop, but that is a part, and part only; the grass and seeds, and clover and caver cannot be measured or valued, and there is the loss or withdrawal from taxation of the amount consumed, and the grave and serious fact that any continued annual valuation could and would only be the source of irritation between the landlord and the tenant. I said I read with regret that a clergyman should have stated or hinted at landlords leaving the country and the homes of their ancestors. By so doing, indirectly, he advocates the keeping up the present system. If, however, we were to examine how much crime exists in this country which may be traced to poaching, which produces drink and leads to other excesses; and if a man is out poaching and gets no game, something else must supply its place—drink

must be had, and frequently a family precariously supported, for poachers as a class do not make the best labourers; and when a man once enters a gaol (and how many owe it to this cause!) the first step is taken, and the ruin of the whole family too frequently follows. Once accustom a man to a breach of the laws, and how can he define or determine the line of difference between a small crime and a crime of the deepest dye? In agricultural parishes, I will ask, what influence have the game-laws and the over-preservation of game had on the necessity for rural police? And how often have we known the poor-rates burthened from the same cause? Some gentlemen would now perhaps inform them how much they had individually suffered. For his own part he knew instances where parties had been turned out of house and home through this very over-preservation of game. In one case an action for slander was instituted, and this slander was through something whispered by the tenant to the lessee of a noble house; the farmer was immediately turned out of house and home; but fortunately, by a jury of his own country he was enabled to get heavy damages, and so he was partly recompensed for the injury done him by this ejectment. No doubt they could supplement these instances from their own personal experience—though, perhaps, it might be hardly prudent for some of them to do so. As to the partridges and pheasants, he did not believe they did any material injury to the farmers, except when they were preserved to such an extent that they might be killed by hundreds in a day (Hear, hear). Then of course the landlord compensated the farmer, or at all events he ought to do so (applause). But as to the ground game, unless the rabbits were kept down day by day they would become a perfect scourge to the farmer (Hear, hear). He thought that some plan or scheme should be devised to give the landlord a good legitimate day's sport: he did not call it sport when you drove game up in a corner, and then had loaded guns handed you so as to fire away as fast as possible. That was not the sport of a gentleman: let them kill the game when they could catch it (Hear, hear). As to what he had stated in his paper, he could support all he had said by facts (Hear, hear). He believed the day was not far distant when landlord and tenant would come together on better terms, and if the landlord had game on an estate he would let the tenant have the first right. If he let the game to a stranger, he should pay taxes, local or imperial; and if he (Mr. Wade) was asked how to levy those taxes, he would say the amount of taxes should be the value of the injury done. That would stop over-preserving (Hear, hear). He had been rather careful on this question because it was a touchy subject.

Mr. G. STOOKE did not disagree with Mr. Wade's paper, but he had no sympathy with those who went in for unconditional and absolute abolition of the game laws. If he was to be a sufferer, though he did not say he was one, and if they were to look on over-preservation as a nuisance, he would rather see the landowner reap the benefit of the tenant's injury than see a lot of idlers let loose on the country with no restrictions on them (Hear, hear). Many people, he thought, went in for the total abolition of the game laws because they thought there would be no penalty then; but they must remember that Dick, Tom, and Harry might then go over the farmers' land with impunity. He did not agree with that; but he thought there was a measure which every chamber of agriculture should advocate, and with which the country at large would sympathize, and it was this—that game and rabbits should be regarded in the eye of the law as the property of the occupier, and then an understanding might be come to by the owner and occupier. It was true that the landlord would, to some extent, be able to dictate terms to the tenant, but then, in return, the tenant would be able to say on what terms he would let the game back again to the landlord. They would then be able to make up in some measure for the damage done by the game, and at the same time tenants generally would be proud to give their landlords a good day's sport. If there was a proper feeling the tenant would feel it a pleasure to relet the shooting of the game on the property which he occupied. That would, he thought, "cut the knot;" for if the tenant became aggrieved it could only be by some of the conditions on which he took the farm being broken. He believed that if a tenant was injured by the game he should have some voice in the matter (applause), and all the power should not be in the hands of the landlord (Hear, hear). There then could be a proper understanding as to the shooting, and the

tenant would be able to have some voice in saying who should be the lessee (Hear, hear). In some instances the lessees were really gentlemen. He knew one lessee who never shot the rabbits himself, but left them to the tenant, and he never said anything if the tenant had an occasional day's shooting, and, kept within moderate bounds. On the other hand, he knew one property on which was a lessee, and on that property all the game seemed to be "farmed." He could not say that he knew for certain that the game was all turned into hard cash, but everything was "kept close," and a tenant would not like to shoot even a rabbit, nor would the lessee like to see him either, except, perhaps, in the month of February, the tenant might be allowed to do so. He thought there ought not to be a third party like this coming in between landlord and tenant. A tenant ought to be able to say whether such a party should be a lessee or not. This idea might take some gentlemen by surprise, but in his opinion they ought to have what was straightforward plain dealing and fair play. It should not be all on one side. A tenant should certainly have his privilege, and he did not think any right-minded landlord would refuse it. Some chambers of agriculture were going in for the total abolition of the game laws. He did not think this would meet with general approbation, but he believed that a very great number would fall in with the scheme he had mentioned if it was generally known. He would also try to assimilate the game laws to the dog tax; he would reduce the cost of a certificate to a mere nominal sum, and call on every man who carried a gun to pay say 10s. a-year, and that would deter many a poacher who now slinks about with a gun, and he believed the revenue would be a gainer by this (Hear, hear).

Mr. J. CREEK agreed with much that had fallen from the previous speaker. He thought the game question laid in a nutshell. He thought that every person who kept a large stock of game should pay compensation to the tenant for all injury done, and he felt that if the compensation was paid the tenant had nothing more to complain of. But then, on the other hand, there would be a complaint from an outsider, and that would be the consumer, who would say there was so much consumed by the game, which would otherwise be brought into the market. He felt that if they legislated severely on the game question it would be the means of driving the game altogether out of the country, and that, as an old sportsman, he should not like to see. He thought that if compensation was made, and there was a clause in the lease giving the tenant power to call in a valuer who should say the amount the tenant had suffered from the game, and that the landlord should pay this amount, then he thought the matter as between the landlord and tenant would be at an end. The tenant-farmer ought to have the compensation which he deserved and which he ought to have a right to demand. As to the question of driving the landlords out of the country, there was something in that. They might depend upon it that if the large landowners of England had not an inducement to come and reside among their tenants it would be a very sad day for the tenants. A landowner might be in town or on the Continent during the summer months, but when September came the landlords came to their homes and remained there until January. Their coming to their country residences and spending their money was a very great benefit to the neighbourhood in which they resided. He should be sorry to see the tenantry of England drive the game question so hard as to drive the landlords away from them. He agreed with what Mr. Stooke said as to the tax on guns, for he believed that if the tax was put on the gun instead of on the certificate it might be the means to some extent of obviating the present difficulty they had to contend with and the amount of expenses they had to meet by the over-preservation of game. On the other hand he thought—and he was sorry it did not come from the chairman—it was to be regretted that there was no law of trespass except a man was in pursuit of game. He should like to see some law of trespass whereby if a man was found on your ground you could have the power of removing him and so prevent parties from going over your land just as they liked. That would do a great deal to put down poaching. He had seen that some advocated the keeping of game just the same as you would barn-door fowls, but he was not an advocate for that. This question of the game laws was a very large one no doubt, but he thought the tenant-farmers had it in their own hands. It was for them to say whether they would take a farm on a lease having the game-reservation clause in it. If they only

stuck together they could dictate terms to the landlords, and he thought they had the remedy in their own hands if they only liked to use it. He did not think they should want to have House-of-Commons legislation on the matter, but as Englishmen they should assert their right, and he did not think that if they came honestly before the landlords that right would be refused. In conclusion he thought that as the chairman had read so excellent a paper and gone so far into the question—though not so far as he should like to have seen, for there was a lot behind—he deserved their best thanks for the great trouble he had taken and for his admirable paper.

Mr. NORTHGOTT (Christow) said he felt very strongly on this subject, and might have what were called extreme opinions. He felt that shooting was not in accordance with the age ("No, no," and "nonsense"). On looking in history he saw that the origin of shooting was in a most barbarous age, when it was necessary for the savages to use bow and arrows or some weapons to kill wild animals for subsistence. But as soon as the country became more populous it was found necessary to till the soil, and the weapons were laid aside. We were now in a commercial stage, and what did they want of shooting now? He held that the agriculturists were entrusted with a very great mission, and that was to grow food for the people, and if they did not do it some others would. At the time the Free-trade measure was passed it was said to farmers, "Oh, you needn't grow anything more," but they found it necessary to grow more and more. But the game had done a great deal in destroying much of their produce, and he was of opinion that in the last dozen years the game-laws had ruined more produce than would have paid off the whole of the National Debt. There was of course a difference in the amount of injury done to different estates by the rabbits. He was on one estate where scarcely 5s. worth of damage was done by the rabbits. On the estate he was now occupying he had a four-acre field, and last year it was sown with wheat; he manured it well, and in about ten days the wheat came up, and it was no sooner up than the rabbits bit off every blade; when he thrashed that wheat the whole produce of the field was three bags and six pecks. The injury was not only the loss of the crop, but there was also the waste of the manure. He thought the tenants should have a safeguard for the outlay of their property of two years' rent. He then referred to a committee having been appointed to draw up a model lease and their failure in doing so, after which he went to the question of trapping rabbits. Some said they kept the rabbits down by employing a trapper, who got so much for each rabbit he trapped. It was ridiculous to say they kept them down by this means, for there were two parties interested in preventing their extermination. One was the man who caught the rabbits, and the other the man who sold them; if they killed all the rabbits their trade would be gone, and of course it was to their interest not to exterminate the rabbits. He protested against shooting because it was a sport that could not be enjoyed by all parties, and he thought that any sport should not be kept from the lower classes. As to what Mr. Creed had said about the tenant dictating to the landlord, that could not be carried out, for where there was one farm to let there were ten applicants. He urged that no one ought to be allowed to foster that which was so detrimental to the welfare of the general community as rabbits. Good farming could never be carried out unless a regular basis was laid down by which shooting should be ruled. He was in the position now where the game was rented, and he felt that it was a position in which no man should be put. He concluded by seconding the vote of thanks, which was carried by acclamation.

Mr. H. H. WATSON (Totnes) said he had been struck by the tendency of one or two of the speakers who had led them to believe that the land-owners would leave the country if the game was going to be destroyed. He could not help thinking that many of these fancies were imaginary, for he did not believe that the landlords were so unpatriotic, so selfish and unwise, as to think of such a thing for one moment. As to the injury that was done to the people of this country by the ravages of the game there could be no two opinions. It was thought by some that it was only a question between landlord and tenant, but it was very much larger than this. He believed that the tenant was not fairly compensated, nor would he ever be, for a surveyor who was called in could not give a fair estimate, for he could not tell to

what extent the crops had been damaged. It was very discouraging to a tenant, after he had laid out a lot of money, to find his crop destroyed and each succeeding crop injured. It would affect not only the farmer himself but also the landowner. The public generally had an interest in this question, inasmuch as they must be fed from the produce of the land. He was surprised to hear some gentlemen say the game-laws were inviolable. As to the plans that had been spoken of, he could not understand that either Mr. Creed's or Mr. Stookes' would be a remedy to the evil. He did not think that the game-laws should be entirely abolished, but he hardly knew where to stop; at all events he should not like to see the laws remain as at present.

Mr. SOWTON (Ipplepen) did not understand Mr. Stookes' plan, and did not see that Mr. Creed's would meet the requirements of the case. He was not in favour of the game-laws being done away with altogether. He thought, however, that the tenant should have the rabbits for himself, that he should be allowed to kill them any way and at any time he thought fit. Then he thought the great evil would be destroyed. As to partridges and pheasants, he did not think there was any very great ground for discontent about them. But he thought they ought to agitate for the rabbits becoming the property of the occupier, and then their crops would not be destroyed. He thought that if they went in for extreme measures they would not get anything, but if they went to work in moderation they would get all they required. As to the lease, what was the use of a farmer dictating to the landlord? The landlord would say, "I must have the game," and if the tenant demurred at this, the landlord could say, "If you don't like it, twenty others will have it." He could not see any other way of meeting the case than that which he had stated.

Mr. STOOKES wished to give a word in explanation. Mr. Sowton had said he was astonished at his scheme, and could not understand it, and then he went on to say that the rabbits should belong to the occupier. His (Mr. Stookes') scheme was just this, only he went in for a larger slice. He only asked that Chambers of Agriculture should advocate this, and that the law should recognise the rabbits as being the tenant's. He did not mean to take solely what the landlord said, but let it become law, and then landlord and tenant could come to terms afterwards. Unless they had it made law some difference would be sure to arise.

Mr. COULTON (Paignton) agreed with nearly all that had been said by Mr. Sowton. As far as hares, partridges, and pheasants went, he did not think they did much harm in this county to the crops. He thought, however, that the rabbits should be entirely under the control of the tenant, who should have the power to trap, ferret, and destroy them at any time. He thought that where hares and winged game did £1 worth of damage in the county, £20 damage was done by the rabbits. Every right-minded landlord who went over a farm, and saw the injury done by rabbits, must feel that it was not right to allow such a state of things to exist. For his own part, his late landlord, Col. Buller, and his present landlord, Lord Churston, always called the keepers to account if they saw many rabbits on the farms. The rabbits generally did most damage on the poorer parts of the land, where the tenant had to expend most money, and they soon took the rent out of the crops. The great evil was where the game tenant got all the rabbits, and that was what the tenant farmers ought to prevent if they could. Then, as to the keepers, he should like to see the tenant trusted more and the keeper less—there should be greater confidence between landlord and tenant. He had seen, and of course there were, good honest gamekeepers, but some of them were as great scoundrels as ever existed. As to the game-laws, he should not wish them to be altogether done away with. He referred to the speeches of Lord Morley and Sir M. Lopes at Plymouth, and regretted to see that the landlords were not present to-day, for it was a question which materially affected them as well as the tenants. He concluded by proposing: "That this Chamber is of opinion that the tenant should have the full power to trap, net, or destroy the rabbits at any time." This, he thought, would meet the case.

Mr. W. RENDRELL (Netherton) would be sorry to see the law deprive the good old English landlord of his sport. If there was a proper confidence between landlord and tenant, they would, instead of having less game, have more. The great complaint was where the third man stepped in. The rabbits were kept at the expense of the tenant, and carried to

market to the profit of the third man. That was the galling part of it. It was not the game generally, he thought, that did any great damage, but only the rabbits. The total abolition of the game laws would not, in his opinion, benefit the farmers, nor did he agree with Mr. Stocker's plan to take the taxes off and make them less than at present. It would be taking it from the rich and putting it on the poor man.

It was then suggested by the CHAIRMAN that this meeting should be adjourned to the Totnes meeting, which would take place on the first Tuesday in January, when it would be discussed by a large assembly, who would also be brought together to speak on the Turnpike Question.

Mr. WARSON, after saying that he thought the total abolition of the game laws would be the result, though he did not quite advocate it, moved the adjournment of the meeting.

Mr. J. H. BROWSE (Paignton) agreed that the tenant should have the right to destroy the rabbits, but he did not

think there should be a total abolition of the game laws. He thought that any ill-feeling that existed between landlord and tenant was caused by the third person stepping in. As to the game shops in towns, they were no doubt supplied by gamekeepers and poachers. They ought to do away with these two parties; and to get rid of the poacher, he suggested that everyone carrying a gun should have to get a certificate costing him £3, and to enable him to kill game he should have a second £3 certificate. This should apply to all except tenants of farms, and then it would put a stop to poachers.

Mr. POLLARD (Paignton), thought the landlords should take care to let the farms only to men of honour, and place the game entirely in their hands. Then the tenants would always be proud to provide their landlords with a day's sport.

The CHAIRMAN then acknowledged the vote of thanks awarded to him, after which it was agreed to adjourn the meeting, as proposed, at Totnes.

FARM LEASES.

At a recent meeting of the Maidstone Farmers' Club, Mr. Thomas Bridgland, jun., in the chair, the subject of discussion was Farm Leases, and the circular stated that the subject had been brought before the notice of the committee by the Chairman, at the request of a large landed proprietor in this part of the county, who had expressed a wish that the Club should endeavour to draw up the clauses of a farm agreement, which would be fair both to landlord and tenant.

Mr. CRITTENDEN said the subject which he had the honour of bringing before them for consideration was one of such very great importance, that he must apologise for taking upon himself the duty of introducing it. It came before them under very impartial auspices, having been pressed upon their attention by a large landowner in the neighbourhood. But independent of that, many members of the club had been for some time anxious of discussing the subject with a view of calling to it the attention of owners as well as occupiers of land and to elicit, and they hoped, to obtain considerable benefit from the various and opposing opinions which undoubtedly existed upon it, and not from any wish on their part or his of recommending any specific form to be adopted, far less of fettering the free rights of the owner of the soil of doing what he likes with his own; but if in so doing he wishes to improve his estate, to act fairly to the tenant, and contribute his item to the general advancement of agriculture, the terms of tenure and cultivation must be fully and fairly considered. The first relation of landlord and tenant was one of buyer and seller. The principal item of the bargain, as all would understand, would be the rent, and it became the duty, as well as the interest, of the landlord, that question being settled, to see how far, while securing himself from injury, he could give to the tenant full and fair scope for the exercise of his ability, so that he could obtain from the land the greatest possible amount of produce; and not, perhaps, as is too often the case, tying him up to farm upon some particular system which is either out of date, ill-adapted to the position of the farm, to the requirements of the market, or to that course which the man himself may be best adapted to carry out successfully. They were all aware that certain methods were adapted to certain lands, and individuals also had peculiar methods which in their hands best tended to success. The general security which tenants have had for some time has been the character of the large landowners of this country, which has certainly stood very high, and men have farmed under them with confidence and satisfaction for many years. Still, changes, in order to keep pace with the times, involved a more expensive, a more energetic system of cultivation, and the farmer did not now look to his reward this year or the next, but to a distant period, probably spread over years. In that case, however sure a tenant may be of the good faith of his landlord, something may intervene. Death, or a change of ownership, or a change of stewardship, or some unforeseen event, may deprive him of his expected and just reward. Many as tenants-at-will had occupied under their landlords and their fathers before them, and that indisposed them to say anything about the matter. Others felt it not to

be prudent, for the landlord might very possibly say, "What you and your family have occupied under me so many years, and begin to doubt my word? Have you lost confidence in my sense of honour? If that is the case, some one else must have the farm." Let us suppose that the landlord, valuing for himself a reasonable independence and protection from loss, thinks he might extend it to his tenant, and replies, "Very well, I will give you a lease. I am going to London to-morrow, and I will see my lawyer on the matter." He went to London, and the lawyer got down from his dusty shelves a cut and dried form, and brought to bear such an amount of agricultural knowledge as he might have picked up in his walks through Lincoln's-inn-fields or the Temple gardens and drew up a document; and could it be a matter of surprise if it should prove very good law but very poor farming. In this clauses are introduced, which, if fully enforced, are ill-adapted to the agriculture of the present day, so that the desired result is as far off as ever. There was, however, this saving clause, and it was a blessed one, that those stipulations were rarely looked after and enforced. In nineteen cases out of twenty if they were enforced, they would be a serious injury to the industrious and praiseworthy tenant. But although those clauses were not enforced the stipulations were ever before the man's eyes, and were one of those little checks to the advancement of agriculture which all were supposed to wish to have removed. On the other hand, it was only reasonable that in giving up his land the owner should wish to retain a little power over it. To prevent it from being injured by bad farming there should be such restrictions as would protect it. Penalties and restrictions bristled in some leases, but that they were any check against injury he doubted; they were a far greater check against improvement and progress. They could endorse that from their own experience. Land let to a good farmer was certain to be improved and returned to the owner in a more valuable condition, and all the laws by which an agreement might be fenced round would not prevent a bad farmer from deteriorating his holding. This, of course, involved the necessity of inquiring into the character of the would-be tenant, and in this there was little difficulty. A large proportion came from the immediate neighbourhood, but where the applicant came from a distance there was little trouble in inquiring into his antecedents. The leases ought to be drawn with as few limits as possible. Men who wished for leases were generally hopeful, earnest, energetic men, who were not quite satisfied with the old way of joggling on, but hoped to see something better than has been done, and were willing to expend both money and labour. Whereas the expenditure of a man who feels that he may have to leave his farm at six months' notice must always have a view to immediate results. He will not, and cannot, wisely lay his plans involving outlay and labour far into the future; thus permanent and urgent improvements must be discarded, and he is too often haunted rightly or wrongly, by the bugbear of having his rent raised over his head as the result of his own improvements. With regard to the terms of the lease, he would recommend, as he said at first, no specific form, only to press the principle that

security of tenure should be given to the tenant as well as freedom of action, freedom to introduce or originate any better system of cultivation than that of his neighbour if he can. The term should be for 14 or 21 years. Seven or ten years might possibly answer the purpose of the agreeing parties, but any term less than seven years was little better than a yearly tenancy. Many of the clauses of the lease must be what they are now. The usual guarantee of rent and taxes by the tenant, the timber not cut, underwood not to be grubbed, nor the grass land broken up without consent. It might be desirable—he did not say that it was—that in this part of the county there should be a certain acreage of hops stipulated for, but in that case the tenant ought to have reserved to him the right to grub and plant at will. All moneys received for hay, straw, and roots should be expended on dung, artificial manure and oilcake, and that the tenant should quit the farm on the same terms as those on which he enters. But, above all, what to plough and what to sow, what was to be the system of cultivation, ought to be left to the judgment of the tenant, so long as there was no cause for dispute. If dispute should arise, it ought to be settled by two independent parties or their umpire, and if they found that the man was not farming in a good and husbandlike manner, then and then only should he be compelled, on pain of forfeiture of the lease, to manage the land on a fixed system named in the lease as that to be pursued during the last year or two of the term. Although the tenant ought to be allowed his full swing during the greater part of his tenure, it was necessary that the land should be left at the end of the lease in such a condition as to secure the incoming tenant from injury. They now came to a term in the lease which if they were to talk till doomsday they would not quite get settled. It was generally expressed in this way, “the landlord reserving to himself the right of sporting over his farm.” And a very good right he had to reserve it if he chose, and very few tenants would object to it, provided the owner himself shoots. But if he was going to turn his land, which ought to be growing food for the people, into a poultry yard, then he contended it was a serious injury to the tenant, and contrary to the spirit of the age. It was no more justifiable than would be the re-introduction of the barbarous boar hunt of their Norman ancestors. A landlord, benefiting largely by the immense strides of arts and commerce, and civilisation generally, must be prepared to make some concessions, and his love of sport must be kept within the bounds of moderation. There was plenty of shooting, which no farmer would object to, and which, he believed, every tenant farmer liked to see, but when 20 or 30 keepers were placed on a farm and pheasants ran about as tame as their own cocks and hens then it was that they protested. He ventured to speak plainly, for it was quite as well that landlords should understand their opinions upon the question. They said let them shoot, let them sport, but let them do it like sportsmen and gentlemen, and they would lend them a helping hand and preserve all the game they could. That was a matter which should be settled, as part of the original agreement, and not left to the discretion of either party, and should be fully borne in mind when considering the rent. Then there was the question of rabbits. They heard something about them lately. His opinion was that they should be subject to the same laws as the rats. He would keep them under, not exterminate them, and the tenant ought to be the party to deal with them. He could only express his regret that they should in these days hear of some glaring cases where the property of the tenant was destroyed through the heedlessness of the landlord. This naturally caused some dissatisfaction, which he hoped might be removed through the good sense and good feeling of both parties. He did not look to the remedy which some people were advocating, and which was now being promoted by the Scottish Chamber of Agriculture, that of legislation on the subject of ground game. With regard to the clause against sub-letting, Mr. Chittenden pointed out that it required a little relaxing, especially under circumstances of ill-health or death, and said when a tenant was unable to carry on his farm, he ought to be able to dispose of his unexpired lease. Although a landlord in case of death, might not forget the rightful claim of the widow and orphans, they ought not to take that as a favour which was their right. With regard to culture, he said, some leases provided that the tenant should not grow two white straw crops in succession, a restriction decidedly absurd and unreasonable. They had lately some of them seen Mr. Lawes’

farm, where wheat had been grown successively for 16 years. He did not pretend to say that they could do that as farmers, he only knew that it had been done, and that there was a possibility of doing a great deal more in growing white crops than had ever been dreamt of. On another piece of land Mr. Lawes had grown nine crops of wheat in 14 years, and if Mr. Lawes had done this, why might not they all hope to do it? He, therefore said, “wipe out all restrictions regarding white straw crops.” The land would speak in very pocket-touching terms to the tenant if he attempt to over-crop too closely in proportion to the skill and liberality of his management. In conclusion Mr. Chittenden said he would venture to press upon landlords—he was sorry they were not there that evening—to give leases, for he was sure in the majority of cases their property would be materially benefited; and to the tenants he would say “strive hard, and never rest till you get them, and you will have a security and comfort which you have never felt before.” The tenant would then have opportunity of carrying out schemes of improvement which would be the natural result of more leisurely reflection, and would benefit the state and his own private interests. And while pressing the general adoption of leases upon their consideration, he need scarcely remind them that when Scotland and Norfolk farmers took their first famous steps in improved cultivation, leases were demanded, and were granted as the sole secure basis of action. Obtain, then, these leases, he said, but make their conditions more free; strike off the fetters that have so long tied the thoughts and hands of the farmers, and although it may not be even then all serene, it will conduce to the prosperity of all parties concerned, and will help on a progressive and a more largely-producing system of agriculture. He might remind them of what, perhaps, they were all too well aware, that the farmer was very hardly pressed by the foreign producer, and that in many respects he was at a considerable disadvantage. He had high rents, high taxation, and his expenses were large. He had sufficient impediments already without any further being placed in his way. He thought, therefore, they might ask fairly for security of tenure, and such freedom of action that the farmer might enter with heart and energy, and let them hope with success, into that competition which he must encounter.

THE SECRETARY then read a letter from Sir Edmund Filmer expressing his desire that the connection between landlord and tenant might be established on a fair basis. He also said that he was constantly in the habit of giving leases himself. He should have been present, but an unavoidable engagement prevented his doing so.

The following letter had been also received from Mr. Elvy:—

“To the Chairman of the Maidstone Farmers’ Club.

“Dear Sir,—As the oldest member of the club, being from age unable to attend, I have put down the heads of a lease I should be willing to take or to give. I believe the shorter and plainer leases are drawn the better. Farmers may have brains enough to farm, but none but lawyers can understand the present leases—that is if they be meant to be understood.

“Yours very obediently,

“Bowhill, 18th Nov., 1869.

“F. B. ELVY.

“Where a lease is not granted a yearly notice to quit should be given, not six months, which is unfair both to landlord and tenant. Whatever the term of the lease the following, I think, are fair terms:—No restrictions as to farming; the times will not allow this. Let the restrictions be a covenant to farm according to good husbandry. To be determined by referees at the end of the lease, or the landlord to have the power of calling on them before the expiration if any gross conduct should render it necessary. The premises to be put into good tenable repair by the landlord, the tenant afterwards keeping them so, on being allowed materials. No permanent pasture to be ploughed up or woods grubbed without consent of the landlord. All draining, or other improvements which require time to repay, to be done by the landlord, the tenant paying 5 per cent.; or, if done by the tenant, with the consent of the landlord, the moiety of the improvements not worked out to be paid for at the expiration of the term. The landlord, or his agents, to have the right to examine the state of the farm from time to time. Hay and straw, or dung, or other manures to be paid at market price; no half manures allowed. Wood, of course, valued to the stub. Timber and fruit trees preserved. Hares and rabbits the joint property of the land-

lord and tenant. Winged game, if desired, the sole property of the landlord. Rent, half-yearly if required. Tithes, poor's rate, &c., paid, as usual, by the tenant. The lease to be drawn in a plain intelligible style; no tautology, such as most leases contain, to render it impossible to understand them. If necessary let the charge be as much for short common sense."

Mr. HODGKIN said there could be no doubt whatever as to the importance of the subject. It had occupied the attention of the Committee of the Farmers' Club and the Council of the West Kent Chamber of Agriculture. There was no doubt whatever that a good lease was necessary for the protection of the tenant, and the progressive character of the age had been well illustrated by the letter which had been received from Sir Edmund Filmer. Any advance in the matter would be alike to the interest of landlord and tenant, and he was sure that it was only necessary for their requirements to be made known for the landlords to fall in with them. The question was, what did they want? The tenant had a right to ask for a free and fair user of the land, presuming the rent was paid, and that he should be able to make the most of his capital and labour, for in advancing his personal interest, as he said before, he was advancing at the same time the interest of his landlord. With regard to the term of the lease, he thought it should not be less than 14 to 21 years, so as to enable the tenant to make the utmost use of his capital. He thought that evening they should come to some practical result by forming themselves into a committee, so as to draw up a farm agreement "which would be fair to both landlord and tenant." There was one matter on which Mr. Chittenden, although he had treated the whole subject in a most admirable manner, had borne too tenderly—the subject of ground game. It was quite time that question was settled. The farmer was now in sharp competition with the foreigner, and anything that restricted his operations ought to be done away with. He thought they could not do better than send up a strong resolution to the Central Chamber of Agriculture, to the effect that the club seriously wished to record its opinion that the over-preservation of ground game should be put an end to by legislation. Mr. Hodgkin then pointed out that his crops in a certain district were eaten off by his neighbour's rabbits, and said nothing could justify his being placed in that position. He thought there was a criminality in the over-preservation of ground game, and that the tenant ought to be allowed to kill all the ground game he found on his own land.

The CHAIRMAN said he could not conceive how a man, who was in the happy position of farming his own land, could complain of anybody's game. If he was in that position, and any nobleman's rabbits or pheasants should come upon his land he should have them. He then called upon the members of the club to keep as strictly as they could to the point, that of farm leases.

Dr. MONCKTON said, he believed if a table were drawn up showing how many farms were held under leases, they would find out that the very best landlords in Great Britain granted the fewest number. Still that was no argument against claiming as a legal right what has hitherto been coded as a

friendly privilege. He quite agreed with Mr. Chittenden as to the absurdity of a large number of leases, and he gave an instance. He said in leases they ought to agree, and write down in fair common sense what they meant, so that they could understand it when it was written. But all this, he said, would of course, after all, depend upon arrangement. Upon the subject of growing two straw crops in succession, while he fully went with the experiments carried out by Mr. Lawes, where nine wheat crops had been grown in 14 years, he thought it was not a precedent to be adopted for their radical guidance in the construction of a lease. A note to the steward, where a man was desirous of carrying out a honest straightforward course in the management of his land, would be found generally sufficient. He protested against any broad and general rules being laid down in all cases. All permanent improvements, he said, ought to be carried out by the landlords, so that they should no longer have any questions of compensation. With regard to game, he humourously pointed out that pheasants were extremely scarce, and said if any one stood on Debting-hill and took in a radius of 10 miles, he did not think much damage could be said to be done there, and that would include a large game-preserving district.—(Mr. STONHAM: "I have had £100 damage done on 200 acres of land in one year.") In reply to Mr. Stonham, he would put a purely suppositions case. Supposing a farmer on 200 acres of land lost £100 by game and rabbits, and supposing he paid 10s. per acre less on account of the fore-known game, how much would he lose? (Hear, hear, and "That's it.") After all the lease should be the mere embodiment of what was accepted by business men as "the custom of the country."

Mr. STONHAM urged that "market" instead of "feed" price should be paid to the tenant for hay and straw on leaving his farm.

Mr. BUSS said that there should be a covenant in the lease that the landlord should find all the materials except straw, and do all the repairs, so that the tenant should not be subject to a claim for dilapidation.

Mr. WOOD pointed out that the generality of landlords were honourable and liberal to their tenants, when they could make direct application, but a second party frequently intervened in the shape of a steward or bailiff. In many districts the landlords let the shooting over the heads of the tenant to a comparative stranger, who sent down three or four keepers, and the land was stocked with game instead of sheep or oxen. He knew an instance in which a landlord had given power to a tenant to dispose of his lease on terms equitable to the tenant and satisfactory to himself.

Mr. CHITTENDEN replied. With regard to the leases, he said, sweep everything away that affects cultivation, and let everything, whether dilapidations or damages through the landlord having too much game, be referred to arbitration. He believed that all matters in dispute could be settled by two gentlemen competent to judge quite as fairly and quite as justly as if they wore the wig or the ermine.

A vote of thanks to Mr. Chittenden was carried, and the proceedings terminated.

THE SMITHFIELD CLUB SHOW.

(Concluded from our last.)

THE IMPLEMENT DEPARTMENT.

We have here to notice more fully the ingenious and simple arrangement shown by Messrs. Hornsby for throwing the cutting-knife of their reapers and mowers out of gear. In their self-delivery machines it is important of course for the man working them to have his hands free to guide the horses out at the ends, or to pull them up in the event of a casualty. And in the smaller machines, where the rake is used, it is equally important that his hands should be at liberty to work-off the sheaf at the right time, and to do this too, as it generally requires to be done, simultaneously with throwing the

knife out of gear for turning a corner or backing for the purpose of re-starting in the right position. Being able to do this with the foot, therefore, and much easier too than it has hitherto been done with a lever and the hand, is an arrangement which merits the greatest consideration by practical men. Supposing the knife is working, and it is necessary to throw it out of gear, all that the man working the machine needs to do is to kick the catch with his disengaged foot, and the required object is effected in an instant. And, again, supposing it is necessary to throw the work into gear, all he has to do is to place his foot on the lever to tighten the rod, when the catch drops into the eye previously referred to, and the cogs are held

as rigidly to their work as though they were a fixture. Any one who has driven a phaeton or waggonette with a hand-lever to affix a break will at once appreciate this arrangement, and, apart from the perfect convenience this is, as applied to reaping machines, it is not of less value for attaching to travelling carriages in hilly countries, when a break is necessary to keep the cross-bars off the horses' thighs or hocks. To complete the apparatus for reaping and mowing by horse-power, the Messrs. Hornsby have designed and completed a portable knife-grinding machine. This compact apparatus is fitted with a seat, and it can be worked with single or double treddle. With it there are rests for bearing and holding the knife when it is necessary to file it, or only requisite to "refresh" it with a stone. As the draught and cleanliness of cut greatly depend on the keenness of the knives, this portable grindstone and rest will prove a valuable auxiliary in the field when at a distance from the homestead. The Beverley Waggon Company have added a self-acting motion to their back-hand delivery machines. This is accomplished by a small cog-wheel, which is worked by the driving-wheel, so that at the end of every revolution of the smaller wheel the open "platform" is allowed to fall backwards, and the gathered corn is thrown off without any assistance from the rake, which can therefore be employed in gathering evenly the corn that is still being cut. Different sized wheels are provided for this purpose, so that the dropping of the platform may be more or less frequent, according to the thickness or other conditions of the crop. The accomplishment of this variation will be understood if the effect of different-sized wheels on a barrel of a corn-drill be called to mind. A small wheel comes round to act upon the lever more frequently, and a large wheel less often, and the distance the machine goes before it throws off each sheaf is regulated accordingly. Messrs. Pickaley, Sims and Co. exhibited their improved machine, which has the advantage of a set of driving cogs in each wheel, one of which is less numerous; and, therefore, by shifting the axle so as to throw one set out of gear and the other in gear, the knife is driven slower or more rapidly according as the crop of corn or grass may require a different speed. Messrs. Burgess and Key exhibited the various forms of their mowing and combined reaping and mowing machines, one of which was the original of "The Autobiography of an Old Screw," which appeared in the *Mark Lane Express* in September last, and wherein it was said it had been through ten harvests, and with a little care in regard to bolts and screws and a renewal of wearing parts, it was likely to go through as many more. Messrs. Howard have, we are informed, made several improvements in their reapers and mowers to obviate the vibration and friction which prevented their attaining their usual prominent position during the trials at Manchester. Messrs. Samuelson and Co., Banbury, had an effective show of their "Eclipse" and other reapers and mowers, both combined and self-delivery.

Of mills and food preparers generally, for single hand use or for grouping under a shaft for driving simultaneously by steam power, there was the usual display on several stands. There is but little new, however, in these machines which is of any practical importance. Messrs. Turner, of Ipswich, exhibited their usual stock; Messrs. Woods, Cockledge and Warner had one of each of their grinding and crushing mills, pulping apparatus, and soon, and an excellent vertical engine, at a low figure, for standing in a small space to work them. Messrs. Ransome, Sims, and Head had also their stock of elegantly-finished mills and machines for preparing corn and roots for the manglers of stables, stalls, and folds. In Gardener's turnip-cutter we found the Beverley Waggon Company had a decided improvement; for the revolving drum which carries the

knives was in the form of circular bars, between which, at the bottom of the hopper, are fixed small iron "pickers," or tongues. As these tongues project slightly beyond the bars (indeed, as far as they can be fixed so as not to catch the knives), the thinnest slice is caught by them, and cut into the required shreds, instead of passing through, as must be the case when only a plain surface for the roots to be pressed against is employed. On the gallery we found Messrs. Pickaley and Sims had a most efficient root-scraper, which shaves turnips and mangolds into tape-like shreds. For mixing with chaff for store stock, so that they may not be made too dainty with a few roots to eat straw or inferior hay, and thereby be simply induced to bellow all the day after they have gobbled up the few roots that can be spared for them—for this purpose, and now that there is some prospect of great efforts being made at home to grow sugar-beet to compete with the Indies in producing saccharine, this "shredder" is a machine which is likely to increase in importance and demand. Messrs. Richmond and Chandler were on the gallery with their large stand of mills and chaff-cutters, which are allowed "in the trade" to be unsurpassed for efficiency and durability of wearing parts. This character is attained from an additional pound, on an average, being spent in labour in drilling bearers and in planing spindles mouth-pieces, and so on. The application of springs, besides, to compress the "feed," instead of the old lever and weight, assures greater pressure when the hay or straw is thicker, while with the lever a thick "feed" tossed up the weight, and the pressure was thus made less at the very time when greater compactness was required to allow a clean and comparatively easy cut. The endless band with its cross-bars for carrying the "feed" forward, instead of its having to be dragged by the rollers near the mouth-piece, together with the long drawing cut of the knives used, make these machines as perfect in operation as can be desired. Mr. H. Bentall, of Heybridge, was also strong in his various preparing machinery, the plain and serviceable character of which is almost as well known all over England as it is in the county of Essex, in which it is made. Horse ploughs are "looking up," in favour and demand. Farmers, indeed, are coming back to a practical consideration of all things from a paying point of view. This consideration includes horse-ploughs. As it has been found that horses must still be used on the farm for general carrying-purposes, it is desired that they should not "eat their heads off," that they must be worked. It has also been found that tearing a steam-plough along at the rate of five miles an hour, from 8 to 12 inches deep, is not a safe plan for preparing a seed-bed, either for wheat in the autumn, or oats or barley in the spring. Curious examples of technical knowledge, as practised when a steam plough has been bought or hired, have been produced during the last few years. Farmers who would watch their men as cats watch mice, lest a greater depth than four inches should be reached for wheat when a horse plough was used, have no sooner obtained the command of steam power than they have rushed in where they previously feared to go, the result being an eight, ten, or twelve-inch seed bed, and scarcely any plants at all in the spring, and no crop worth cutting at harvest—in short, the steam ploughing produced a *death-bed*, instead of a seed-bed for the wheat. This may account in some measure for no steam plough being in the Hall during the late show. The success, too, of Pirie's three-wheel and two-furrow plough, as made by Messrs. Fowler and Co., Leeds, is proof positive that the use of the steam plough for a cereal crop is almost altogether abandoned. Two other ploughs on Pirie's principle are said to be in the field, and that the right to make the diagonal axle, wheels, and other

parts of this singular plough may possibly be contested in the law courts. In regard to one-horse ploughs we need only mention the names of such makers as the Howards, the Ransomes, the Hornsby, and Balls, for their iron ploughs are everywhere well known and practically appreciated according to their merits. Indeed, these ancient implements of husbandry have become so perfect under the hands of our modern agricultural engineers that it is now just a matter of the character of the work to be done, the quality of the wearing parts, and the price that need guide any one in selection. But Messrs. John Cooke and Co., of Lincoln, have recently produced a novelty in wood and iron, which has attracted a good deal of attention, not only of farmers but of other makers. This implement is as strong in the parts which take the strain of the draught when it is at work, as the beam and handle of an iron plough are at one stone more weight. This strength with lightness is obtained by affixing to a wooden beam a length of "angle" iron $3\frac{1}{2}$ inches by 3 in width. The thickness of the "angle" iron is regulated according to the work the plough is required to do. But the strength of $3\frac{1}{2}$ inches of iron one-eighth of an inch in thickness may be reckoned by an attempt to bend a narrow iron hoop sideways. We here, of course, confine our remarks to the strength and durability of a beam so constructed, for any form of mould-board and other arrangements can be fitted, and we have already allowed that work by ploughs, like the cutting part of reapers and mowers, is an accomplished fact, needing no further improvement. The whole matter has now, therefore, resolved itself into work to be done, first cost, and wear and tear of parts.

In screens and hand-winnowing machines there was nothing new, but Messrs. Garrett, the Ransomes, Peuney, of Lincoln, and Boby, had specimens of the rotating and oscillating screens, all of which are scarcely open to improvement for the purposes for which they were intended. The amut and atmospheric separating machine, however, of Messrs. Neil, Harrison, and Co., of 78, Aldermanbury, London, is a wonderful contrivance for a combination of economised space, and doing an extraordinary amount of work in dressing corn. The smuts are first rubbed to pieces in a cylinder, or any foulness which may have been produced during a long sea voyage is then rubbed loose, when corn and dust together pass into a box at the bottom of the machine, where a sieve is at work to receive stones. Through this box a draught of air is produced, which bodily conveys corn and dust to the top of the machine, over which all injurious matter is carried away, while heavy, medium, and light valueless grains fall upon sieves as they arrive into a wider space, and the air pressure on each grain is thereby diminished. This application of an artificially produced and confined draught of air to separating grain is by far the most efficient process yet introduced; for the specific gravity of a grain generally determines its comparative value, both as regards its nutritious character and purity. The most accurate screen or sieve cannot take out bulky light grains, when they do not exceed in size the ordinary measure of the bulk, but by causing them literally to be suspended in mid-air, and then carried by a cross-current over a sieve or box, where the draught grows uniformly less, must take from the bulk anything which it is desirable should not be there. This machine, however, is too expensive for farmers, except it be on very large occupations, but for mills and the granaries of merchants, it is a mechanical contrivance which performs its work in the most complete manner.

The seed stands were as large, as elaborately arranged, and as cleverly decorated with the more ornamental productions of each exhibitor as ever; and Messrs. Gibbs, Sutton, Carter, Wheeler, of Gloucester, King, of Cogges-

hall, Harrison and Sons, of Leicester, and others, had most effective displays, showing the advantages attendant on purity of seed for all kinds of agricultural crops.

THE SMITHFIELD CLUB SHOW.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—The return of the Smithfield Club Cattle Show suggests many pleasurable reminiscences to my mind, causing me to look back to what I always have considered its origin. I refer here to the practice of two patriotic individuals—Francis, Duke of Bedford, and Thomas William Coke, Esq., afterwards Earl of Leicester—of inviting agriculturists from every quarter of the civilized world to their annual sheephearings, for the avowed purpose of promoting the interests of agriculture by bringing together in social and harmonious intercourse a body of men hitherto isolated and almost useless to each other; but amongst whom in a collective capacity, by which mind is brought into contact with mind, the results of individual thought and experiment could be compared, a fund of useful information disseminated, and traditional errors in practice corrected. Those annual gatherings I had the pleasure of attending for many years, and both witnessed and partook of the almost lavish hospitality extended to five or six hundred persons, who, for three consecutive days, were invited to a sumptuous dinner, the noble host presiding. Men of all ranks, classes, and professions met there on equal terms, and men of science, particularly chemists, were special objects of attention, Mr. Coke being the first man of note who introduced those who professed it to the attention of the agricultural world. That science as applied to agriculture was in its infancy; but from the patronage of such men as the Duke of Bedford and Mr. Coke it soon assumed an importance which has ever since progressed, until it has become the leading agent in the cultivation of the land.

The Duke of Bedford unfortunately died in 1801, and his successor thought proper to discontinue the annual gatherings. The last was held the same year in which his brother died, and at this I happened to be present, and heard the expressions of regret that so useful an institution should be given up. Mr. Coke continued the meetings at Holkham as usual, until age and infirmity rendered the labour of preparing for and sustaining them too onerous to be continued. But the foundation was laid for that flood of light and knowledge which has since been brought to bear upon the practice of agriculture. We see the effects of this, in a greater or less extent, upon the whole body of agriculturists, not only at home but abroad; on the continents of Europe, America, and Australia (for this last must have such a character from its extent), and in every colony and country to which British intercourse extends. Now, whatever may have been the subsequent efforts of other men—and a powerful phalanx of scientific and practical men have sprung up and followed in the same steps—the movement certainly had its origin in those annual gatherings which took place on the domains and under the auspices of the Woburn and Holkham chieftains.

And what have been the ultimate results of these periodical invitations to men of science and practice from all parts of the world, uniting men of wealth, enterprise, and intelligence—men of all ranks and classes in society? We see the results in the universal movement of the agricultural world for the formation of kindred institutions, of both a local and a general character; in the establishment of Farmers' Clubs and of Agricultural Societies throughout the kingdom, by which mind is brought into contact with mind, which, like that of flint and steel, necessarily elicits sparks of intelligence, and knowledge is disseminated amongst a body of men who formerly led lives of isolation from the sources of information. We see these in the weekly reports of agricultural journals, of the papers read, and the discussions which follow on all subjects connected with agriculture and the cultivation of the soil. We see the results likewise in the multiplication of agricultural machines and implements, and in the rivalry of the makers of them, by which such is the perfection to which they have attained that manual labour in all its most onerous forms is reduced to a mere healthful exercise. We see these in the superior education of farmers, in the establishment of agricultural colleges where the youths are

instructed in both the theory and practice of their profession. Lastly, we see all these efforts culminate in the increased production of the soil, in the improvement of the types of both animal and vegetable produce, as exemplified at the various local shows throughout the kingdom, and especially those of the Royal Agricultural Society and of the Smithfield Club, the anniversary of which has just been held, and has given rise to this letter.

Considering the heavy losses sustained by the graziers and breeders of cattle, and the continued dread of a recurrence of the disease under which they lie, of a renewal of the decimation, the present show is perhaps better than could have been expected. The Devons, which, as usual, occupy the first five classes—the aristocracy of the show—are, I thought, fully equal in merit to those of any former occasion. The number exhibited is large—41; and in many instances in this, as well as other breeds, the judges must have been frequently perplexed by the near equality of merit. The first prize animal in Class 2, the property of Mr. C. Humber, M.P., is a splendid animal. There is one in the first class belonging to Mr. John Overman, of Burnham, Norfolk, which struck me as more worthy of a prize than some of its competitors. I have, however, been too long out of practice to pass criticisms upon the professional critics, who, there is no doubt, have exercised sound judgment.

The Herefords occupy the next five classes, consisting of 24 animals. These were not so good as usual, probably owing to the decimation the country suffered in its herds by diseases, only four of the specimens belonging to residents there. I noticed a beast belonging to Mr. Robt. Wortley, of Suffolk, as being specially meritorious, although it took only an inferior prize.

Dec. 15,

THE OLD NORFOLK FARMER.

BY A PRACTICAL FARMER.

The chief particulars of the exhibition of the above-named Club in cattle, sheep, pigs, implements of husbandry, and agricultural machinery have been so well and ably reported in the *Mark-Lane Express*, that it would be quite superfluous for me to make any observations in the nature of a report; there are, however, some things arising out of this, our country's annual gathering, which may be very properly and usefully brought before the public, and which it would be well to discuss and have thoroughly considered, so as to make these most interesting meetings of the greatest possible benefit.

The Club has adopted and carefully put in practice one very important feature in the show, whereby much true practical knowledge might be gained and diffused—I mean in obtaining the weights of each animal. Upon entering the hall of exhibition, I found it a very useful and pleasing addition to the interest with which I viewed the show. No one is well qualified to judge with accuracy the weight of animals of the many different breeds exhibited. He may approach with tolerable exactness in estimating the weights of cattle and pigs, but I cannot conceive of any accurate judgment in the various classes of sheep; hence the great value in taking the live weights upon entry. Many specimens in these classes are so beautifully shown, in exact proportion and shape, as to be very deceptive to the uninitiated. I took some trouble in comparing some of the sheep classes. The two prize pens of Leicesters, 23 months, shown by Lord Berners, very compact, beautifully-fed animals, weighed respectively, or averaged 6 cwt. 2 qrs. 21lbs. and 5 cwt. 3 qrs. 7lbs. live weight. The gigantic Cotswolds, 23 months, near them, averaged respectively 7 cwt. 2 qrs. 5lbs., and 7 cwt. 16lbs. Mr. Byron's 23 months' prize pen of Lincolns averaged respectively 7 cwt. 3 qrs. 26lbs.; Mr. Casswell's 23 months' 7 cwt. 3 qrs. 11lb.; and Mr. Morley's 23 months' 7 cwt. 3 qrs. 16lbs.; Lord Walsingham's 23 months' Southdowns averaged respectively 6 cwt. 2 qrs. 21lbs.; his 35 months', 6 cwt. 1 qr. 25lbs.; Sir W. Throckmorton's 35 months' pen, average 6 cwt. 3 qrs. 16lbs., his 23 months', 6 cwt. 1 qr. 7lbs.; Earl Radnor's 35 months', 7 cwt. 17lbs. Messrs. Russell's prize pen of Herefordshire Downes average 7 cwt. 1 qr. 26lbs.; Mr. Walter's second prize pen, 7 cwt. 8lbs. Lord Chesham's prize Shropshires weigh respectively 6 cwt. 25lbs.; Lord Wenlock's average 6 cwt. 1 qr. 21lb.; his 35 months' 7 cwt. 1 qr. 26lbs.; Mrs. Beach's 35

months' average 6 cwt. 3 qrs. 18lbs. Mr. Rogers' 23 months' first prize pen of Oxfordshire Downes weigh respectively 7 cwt. 4lbs.; Mr. Street's second prize pen, 6 cwt. 3 qrs. 11lbs.; Mr. John Overman's prize pen of 21 months' Long-wooled Southdown half-breeds weigh respectively 7 cwt. 1 qr. 31lb. Now, I think instruction of no mean order may be derived from some comparisons of the above breeds and weights. Lord Berners' 25 months' Leicesters weigh 6 cwt. 2 qrs. 21lbs. These are taken to be pure Leicesters, and finer specimens of the breed are seldom seen. Lord Walsingham's 23 months' Southdowns are equally fine specimens, and weigh precisely the same weight—i.e., 6 cwt. 2 qrs. 21lbs. I venture to say that few visitors at the show, nor even judges, would estimate the two pens at equal weights, their appearance and size being so dissimilar and disproportionate. The Cotswolds near them, to all appearance, from their size and proportions, seemed vastly to outweigh them; but not so, when the proportion of offal is taken into account, which is far heavier in the Cotswold than the Southdown. The Lincolns again average more than the Cotswolds—yes, considerably, which is unusual, and denotes advancement in the breed. The Hampshire Downes come nearest in weight to the Lincolns as a distinct breed; the Oxfordshires next, followed pretty close by the Shropshires. The Half-bred Lincoln and Southdown stand in point of weight next to the Lincolns, and are of superb quality. We will also take the sheep at 35 months; Lord Walsingham's 35 months' sheep weigh respectively 6 cwt. 1 qr. 23lbs., his 23 months' sheep, 6 cwt. 2 qrs. 21lbs., showing an actual loss by 12 months' keeping. Sir W. Throckmorton's 35 months' sheep, average 6 cwt. 3 qrs. 16lbs., his 23 months' sheep, 6 cwt. 1 qr. 7lbs.: this again proves a very trifling gain in 12 months (and goes far to prove that Southdowns are earlier brought to maturity than some other breeds). Lord Wenlock's Shropshires show an increase of more than 1 cwt., and Mrs. Beach's pen denote a tolerable increase in weight during the year, but not enough to justify over-holding; and in looking over my figures it will be found they tell conclusively against this over-holding, and that early maturity in the majority of breeds is to be sought for universally, and early feeding practised. We also learn the near approximation in weight of different breeds of sheep, as also their respective weights when got up for competition. The Lincolns, Cotswolds, Oxford, Hampshire, and Long-wool and Southdown half-breeds, are nearer upon a par as to weight than is generally supposed. The Leicesters, Southdowns, and Shropshires are of less average weight, but approximate near to each other. It may be said that this, in this single show, is no great criterion upon which to found a judgment. It may be so; still, I think all breeds were represented with tolerable fairness. At all events, by continuing this practice of taking the weight, good practical results will be ascertained ultimately. The like results may be obtained of the cattle and pigs. It will be important to collect these facts relative to cattle, because year by year we have a greater influx of cross-bred animals, many of them showing superior points, and greater weights than pure breeds. There were splendid specimens of cross-breeds at the past show, some approaching 1½ tons live weight. There was another feature in the show that struck me forcibly: it was the number of exhibitors from the upper classes, from Royalty downwards—the Queen, the Prince of Wales, Dukes, Marquises, Earls, Lords, Baronets, Knights, and Esquires. I should be the last to call such most important and praiseworthy endeavours in question; nothing can add more to a country's benefit than such noble examples; but what I do call in question is the possibility of ordinary breeders and country farmers coming into successful competition with such noble exhibitors, who are regardless of cost. I have seen many of their establishments for fattening stock, their conveniences, and the attendance most admirable, such as tenant-farmers can but very rarely imitate. The Smithfield Club have ample funds; what should prevent the Club from offering a series of prizes for tenant-farmer's classes only. It would greatly enhance their show in point of numbers. Tenants are not often found to compete against their landlord, simply because they cannot go to the expense. There are tenant-farmers who do successfully compete, but they are exceptions. I want to prevail upon the general class of farmers to aim at such distinctions, depend upon it they would be gainers in their business ultimately. The fattening of stock is, upon many farms, I had almost said the majority of farms, a matter of course. There is little or

no regard paid to warmth, ventilation, cleanliness, punctuality, in administering food, or the best application of the food given. Prize stock know of no privation or discomfort. Something approaching such care should be general with graziers or feeders of stock. The Club show is wholly confined to fatted stock. I should like a tenant-farmers' class in

each of the Devon, Hereford, Shorthorn, and cross-bred classes as a beginning, ultimately to be extended to sheep. [Of course it would be absurd to establish "tenant-farmer" or any other limited classes at a national meeting, the very heart of which depends upon the competition being open to all.—EDITOR F.M.]

INOCULATION FOR PLEURO-PNEUMONIA.

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The following is the report in full of the deputation from the Cheshire Chamber of Agriculture that visited London:—

"We are sorry to have to say that the results of our inquiry respecting the efficacy of inoculation as a preventive of pleuro-pneumonia in cattle is not as satisfactory as we could wish. All the cow-keepers we saw in London spoke favourably of it; but the opinion in its favour we found was evidently given more as an expression of hope and of feeling than of direct testimony from actual experience. They resorted to it on a first attack of the disease, said they, but as a rule did not inoculate so long as their stocks were healthy. When asked why they did not inoculate all their cows as soon as they came into their possession, or when they were quite free from the disease, as a safer precaution if their theory was correct, they answered, 'There was always a risk of some cattle dying from the effects of inoculation, and they thought it best to let well alone.' The utmost support of the practice we got was that they thought their losses were less in an attack of pleuro when their cattle had been inoculated, than when they had to combat the disease without this protection. Since the plague had swept away their cattle, their sheds had been comparatively free from pleuro; but now it was making its appearance again, and they were again resorting to inoculation. That they did inoculate largely before the time of the plague was confirmed to us by Mr. Priestman, a veterinary surgeon having an extensive practice among cattle, who was recommended to us by Professor Simonds, as the best authority on the question in London, and who supplied us with a list of fifty-seven names of persons for whom he inoculated 4,515 cows from the year 1858 to 1863, and many cattle-keepers, he informed us, practised the operation themselves in their own stocks. On the other hand, he admitted that some cows took the disease after having been successfully inoculated, and that some died from its effects. The proportion of deaths was difficult to state, he said, as the rule with them was to sell their cattle to the butcher as soon as attacked. Their practice was to keep their cows in good condition, and as they were always meat it paid them better than to attempt their recovery.

"We visited nine large dairies in different parts of the town and suburbs, being introduced and accompanied by Mr. Priestman, and saw the effects of inoculation in several of them in different stages. The operation in itself is very simple. The hair being cut close off on one side of the end of the tail for about an inch square, an incision is made lengthwise well through the skin with a sharp-pointed knife and held open while one or two drops of matter are dropped in out of a bottle. The selection of the virus or matter is most important. Mr. Priestman prefers obtaining it from the lung of a cow that has had that disease three or four days only, and using it as soon as possible, as stale matter induces swelling of the tail and often necessitates its being cut off. A blow on the tail after the operation, and before the wound is properly healed, should be avoided, as it will cause much swelling and may soon result in mortification. Careful attention should be given daily, and prompt means used to reduce inflammation as soon as it appears. Of the 4,514 which Mr. Priestman inoculated 32 died from its effects, or three-quarters per cent., and 248 were seriously affected but ultimately recovered.

"We also had the advantage of a conversation with Professor Brown, of the Veterinary Department of the Privy Council, on the subject, in the course of which he stated that he had little faith in its effects. The evidence of its success was most conflicting. Professor Gamgee, he knew, was enthusiastic in its praise, but he had known cattle to die of pleuro that he had inoculated, some of which had suffered the loss of their tails from the operation. Professor Simonds, he

said, had inoculated cattle in the tail with gum-water and Croton oil, and had obtained the same outward results as with the matter from a diseased cow's lung. It was true, very likely, that few cases of pleuro, or perhaps none, occurred in some dairies in London after inoculation; but it was also true that there were many dairies which had not been visited by it for years in which inoculation had never been practised. Referring to the experiment being made at the instance of Mr. Tollemache, in Cheshire, in placing inoculated heifers by the side of beasts suffering from pleuro, and exposing them to the effects of contagion, he remarked that the trial would not prove much. To be perfect, heifers that had not been inoculated should also be placed with them. Some cattle seemed to be invulnerable to its attacks. Some facts which we gathered incidentally may not be without interest in our report to the Chamber. Dutch cattle, we were told, suffered less from attacks of pleuro and disease generally than any of the English breeds in London. An instance of the recovery of 25 cows out of 80 from plague was given us, 21 of which were Dutch and only 4 English. Foot-and-mouth disease seemed to prevail more or less in most of the dairies we saw, and it was thought that pleuro often followed in its wake. This, however, did not appear to deter dairymen from making fresh purchases. One man had just given £90 for three cows, which he would have to place in the same shed with about 20 others, nearly all of which had got foot-and-mouth disease. Milk-selling in London we thought must be profitable. Two only of the sheds we visited were in good keeping. One, containing about 120 cows, was a dark, ill-arranged building, and so crowded that we wondered not at the proprietor's statement that he had lost 16 cows per month for months together, from pleuro! Mr. Priestman strongly recommended the use of carbolic acid in cases of pleuro and foot-and-mouth disease, and he furnished us with a detailed report of the treatment he had pursued in eighteen different stocks of cattle, and the results. He proposes to apply it as a disinfectant, diluted with water, on the floor, walls, and ceiling, or roof of the shippens, applied with a syringe, and to administer it internally three times a day in suitable proportions, and asserts that when used early and plentifully, it is 'pleuro's master,' and soon drives away the foot and mouth complaint. Professor Brown also spoke favourably of the treatment." In a discussion which followed,

Mr. Aston was in favour of inoculating cattle for pleuro-pneumonia. He would not attempt to argue that it secured entire freedom from the disease. Those who were acquainted with the experiments made in the country and on the continent, must admit that there was a certain per-centage of cattle which had been inoculated that were liable to take the contagion; still, if they had been operated upon in a proper manner, he believed that the attacks were not so numerous or virulent, and the recoveries were greater from those inoculated than others. The suggestion which had been offered to them by Professor Brown, that two young heifers not inoculated should have been sent with those so kindly placed at their disposal by Mr. Tollemache, was very timely and worthy of their special attention. It appeared from an experiment made on the continent some few years ago on rather a large scale, that 34 per cent. of the cattle removed from healthy districts to those which were affected entirely escaped contagion, 66 per cent. were affected with the disease in a greater or less degree, and 17 per cent. of those died. It was proved by the experiment that the pleuro was a very contagious disease, and he also concluded from the trial that it was possible to remove stock out of healthy districts, to those animals that were suffering from pleuro, and yet

escape the contagion. His belief was that it would be better to associate inoculated heifers with the inoculated cattle, but he thought it would be unreasonable to expect that gentleman to expose any more of his stock to such a highly-contagious and destructive disease; and he considered it was a matter which the Chamber might very properly take up, and purchase two yearling calves or stirk heifers and send them to the premises where the infection existed. The cost of doing so would be very trifling, and he had no doubt the agriculturists of the county would look forward with very considerable interest to the final issue of such an experiment. He (Mr. Aston) had a conversation with a farmer on Tuesday evening, residing within about two miles of Tarporley, who lately had pleuro. On inquiry he ascertained he had only six cases, three of which had proved fatal, while there were three recovered. After the first four cases, he inoculated all his cattle; one was suffering from the disease at the time, and this recovered. He had also another attacked after the operation, but this also had recovered, and since that time, which was about ten weeks ago, his stock had continued in a healthy condition. He appeared to have strong faith in the operation, considering it was inoculation which had arrested the progress of pleuro.

Major LEIGH said he should like to know if any stock which had not had pleuro had been inoculated. As far as he could ascertain, inoculation had been tried only upon cattle that were suffering from pleuro.

Mr. ASTON said he had had a conversation with a farmer last Saturday, who had inoculated a herd of heifers. How many there were in it he (Mr. Aston) was not prepared to say; but the reason he did so was that he had the disease on his premises, and had occasion to bring these cattle, which were then two or three miles away, on to the premises. He inoculated them as a preventive, and they did not take the disease after their removal. They were inoculated while they were in a healthy state.

Major LEIGH wished to know whether they could tell him why the tail was the part chosen for inoculation?

Mr. TELLWRIGHT thought it was because they would lick the matter off if it was done elsewhere.

Mr. JACKSON said he was very happy to confirm the very correct report read by the secretary. In addition to it he would read the following letter, which he had received in reply to one he had addressed to a large cowkeeper, living at Kennington Park Road, London:—"Kennington Park Road, London, Dec. 15th, 1869: My dear Sir,—We have practised inoculation for the last twelve years with very good results, and in every instance that the cattle have lost a portion of their tails they have kept free from pleuro-pneumonia. We have lost several by the inoculation running up into the body, but that we could generally attribute to want of care. There are a great many that will not take when inoculated, and of course it is not a preventive; neither do we think it is much good unless they are inoculated when first they are brought into the sheds. Our own men that attend to them perform the operation, and great care is required in choosing the lung at the slaughter house.—I remain, yours truly, JAS. HIGGS.—G. Jackson, Esq." Some time ago he was reading a paper, by Howard, M.P., Mr. reported in the *Journal of the Farmers' Club*, part of which was to the following effect:—"Pleuro-pneumonia has made such ravages that M. Dumont and many others have adopted the practice of inoculation: the pus is obtained from the State Veterinary College, and inserted at the tail. If the operation is performed in hot weather the tail drops off through mortification setting in, but when done in cool weather no injurious consequences ensue. Having suffered much from this fatal disease among my cattle, I was determined to try it, but have hitherto been prevented by order of the veterinary inspector of the county, who has acted on the advice of Professor Simonds. The Professor opposes the practice; but those practical Belgian farmers who have had extensive experience, regard it, to use M. Dumont's own words, as a 'sovereign remedy.'" Since this he had addressed a note to Mr. Howard, and had received this reply:—"Dear Sir,—It would afford me much pleasure if I could give you any further information on the question of inoculation than is contained in my lecture on Continental Farming. All I can say is, that many sound, practical farmers in Belgium, Germany, and France seemed to place much faith in the practice. M. Dumont, of Fleurus, Belgium, is quite an authority in that country. On his farm I

saw a considerable number under inoculation. I have suffered much upon my own farm from pleuro-pneumonia, and hence I strongly urged on Mr. Forster before the introduction of his Bill the necessity for dealing with this and the foot-and-mouth complaint, as well as making provision for rinderpest. I agree with you that the only plan to rid the country of this ruinous disease, pleuro, is combined exertion to stamp it out. I believe the virus remains active for an almost incredible period. For three years in succession it broke out on my farm in one field, and months elapsed in the last case before fresh stock were put into it.—I am, yours, &c., JAMES HOWARD. P.S.—The Government departments of France and Belgium would doubtless supply information on the subject. I had a talk this week with Mr. Forster about inoculation, who thought it was not a matter for Government to undertake, but rather for the agricultural societies. I think the Royal might fairly be called upon—it has plenty of funds." He (Mr. Jackson) had a strong impression at first that inoculation was like a good many other things that had been tried to prevent the spread of pleuro, and was unwilling to believe that there was much to be relied upon in it; but from the inquiries he had made, and from a statement made by a neighbour of his who had been to Australia and had considerable experience in connection with the matter there, he was strongly inclined to come to a different conclusion. About five years ago a cow was brought out to that gentleman from England, which in about three months after landing was seized with pleuro. She was slaughtered, and all the animals in connexion with her were slaughtered too, and it was hoped that these strong measures would stop the spread of the disease. Unknown to them, however, some bullocks had been in connexion with the cow, and these being travelling bullocks, went up the country about 200 miles, and spread the disease along the whole track. Slaughtering was largely resorted to, but that was impossible in all cases. What they did not slaughter, however, they inoculated, and they found the practice exceedingly beneficial. They seemed to consider that they stopped it quite as much by inoculation as they did by slaughter, and he said that he inoculated thousands himself. If they inoculated with virus of a particularly malignant kind they lost them; but generally speaking the losses were not serious, and they had so modified their virus that they could calculate upon a very small per-centage of death. He did not recommend the inoculation of healthy stocks unless there was a likelihood of their coming in contact with the disease; but when there was actual disease he recommended all the cattle in contiguity with it to be inoculated. It was quite true that it could not be looked upon as an absolute preventive. Unfortunately in his own locality they had the pleuro about six months ago, introduced by a cow brought from Wrexham fair. After slaughtering nine or ten they sent for Mr. Dunn, of Tarporley, and inoculated the rest. Afterwards three cases occurred. One was violent, and they slaughtered it; the other two were milder, and they allowed them to live. Since then they have had no cases of pleuro whatever. This would seem to throw some doubt upon the value of inoculation, but the general impression in the neighbourhood was that the virus had not taken proper effect, as only three or four of the dozen cows which were operated upon seemed to have suffered inflammation in the tail. He would only say further that had he a case of pleuro in his own stock, he would consider it is duty to inoculate the whole stock at once.

Major LEIGH said he believed the matter was taken from the lung of a dead cow. (Mr. Jackson: A slaughtered cow.) It seemed to him that they would be more likely to have favourable results if they were to take the matter from a living animal, because the dead beast must have had the disease badly.

Mr. RIGBY said he believed the matter was considered best when it was taken from a beast that had had the disease three or four days. They did not like to take matter from cows in the last stage of the disease, as the blood might be poisoned, and this would produce mortification. Mr. Rigby then read a letter of apology for absence which he had received from Mr. Tollemache, M.P., in which that gentleman referred to the subject of the meeting, remarking that though inoculation was not found to be an infallible preventive it might be of great value to the farmer, just as in the case of vaccination, the beneficial results of which, though it sometimes failed, were universally acknowledged.

Mr. JACKSON said, with reference to the appearance of the inoculated beast when the operation was effectually performed, the tail was generally inflamed, and in some cases inflammation came on to a very serious extent indeed. A number of those seen by the deputation had had portions of their tails cut off in consequence, and one cow had had three pieces cut off her tail, which was then not more than five or six inches long. In some cases it produced a serious fever of the system, and in others they died.

Major LEIGH: Does it always create pus?

Mr. JACKSON: A little matter where it takes.

Major LEIGH: Do you know whether they have ever tried to make use of it? It seems to me that if that were the case, you would have a much better chance of saving your cow.

Mr. JAMES EDWARDS said that was a subject more for the veterinary world. The question before the meeting was whether the Chamber would recommend to the farmers generally the practice of inoculation? For his own part he thought if it was of any value at all it should be performed on the healthy beast, and that it would be unwise to leave the stable-door unlocked until the horse was stolen.

Mr. RIGBY fancied that when the inoculation took in a favourable way there was very little pus created, and that was the reason why a slaughtered cow was chosen in preference to a live one. However, he would make the inquiry from Mr. Priestman.

Mr. G. SLATER said he had been sceptical in regard to inoculation, but he was pretty nearly converted. He had some conversation lately with a man of great practical experience, who had lost three or four of his cattle by pleuro, and had then inoculated the whole of his stock, numbering thirty or forty, and had saved every one of them. He (Mr. Slater) asked him particularly what he would recommend in reference to healthy stock, and he said this—he certainly would not inoculate healthy stock unless the disease made its appearance, as there was a little risk and expense with it; but when he had an animal suffering three or four days, he would slaughter it, take the virus from its lung, and inoculate the rest, and he should confidently calculate upon saving them. He (Mr. Slater) had seen another farmer who gave evidence of a similar character, and he thought they were not only bound to listen to evidence, but that when it was so strong it became absolutely irresistible. Mr. Slater then referred to the case of a friend who had been for some years residing in South Africa, where he said inoculation was very generally practised, and he laughed at the ignorance of the Cheshire farmers, who were only just making experiments to test its value. The things about which they should take particular care in manipulation (said Mr. Slater) were that the virus was properly obtained, that cattle were not inoculated till disease appeared upon the premises, and that the very best skill was procured to conduct the operation. The animals, too, should be carefully watched to see that they did not lose their tails, which frequently resulted from pure neglect. He thought if they attended to these things they would find good reason to put faith in inoculation.

Lord EGERTON, the chairman, said, after the very able report which had been read, the question to consider would be this—whether the Chamber considered itself in a position to commend to the farmers of Cheshire the process of inoculation? He confessed that after the strong opinion which had been pronounced by the gentlemen in London upon the subject, he hardly thought they were in a position to make a positive recommendation to that effect. Mr. Tollemache having been good enough to place two inoculated heifers at their disposal,

he (Lord Egerton) would like to suggest that, in case of any of their members having the disease upon his premises, their Secretary, as an experiment for the information of the Chamber, should be empowered to pay for the inoculation of the remainder of his stock. They would then be in a position before the summer to see whether inoculation had answered. One single case he thought was not sufficient to base the recommendation of the Chamber upon. He should like to make a remark with respect to carbolic acid. He (Lord Egerton) had had the foot-and-mouth disease through the whole of his stock, and they found the use of carbolic acid diluted both in washing the mouth and feet, and in some cases taken internally to be of the greatest value. At the time of the riderpest he lost a great number of cattle out of doors. They took the remainder into the shippin, where they remained nearly a year and a-half shut up, chlorine gas being freely used, and they found it the best disinfectant that could be employed. It never affected either the cattle or the men, and it was no inconvenience whatever. He was happy to say that in consequence of the able measures taken by the Chief Inspector, Captain Smith, with the co-operation of the farmers, pleuro had not spread very extensively in this county. The number attacked from the 28th of August to the 11th of December was 123, out of which 26 had been killed for burial, 31 for meat, 23 had died, 38 had recovered, and five were under treatment. In the case of foot-and-mouth disease during the same period 2,249 had been attacked, four killed for burial, three for meat, 11 had died, 1,935 had recovered, and 316 were under treatment. He might say likewise that the other day one of the committee on the subject had looked over the accounts of Capt. Smith, and had found that it had been done at a very small expense indeed, not exceeding £80 for the three months, and out of that a-half or two-thirds had been paid for the dresses of inspectors and other things which would not recur. The county then might feel that they had a very efficient body of inspectors at a very small expense. With regard to stock, he should strongly recommend that, if they tried the experiment, they should do it with cattle of a certain age. Very young stock were not at all liable to the disease. It went through the whole of his (the chairman's) herd of oxen, but out of 700 head in the adjoining park out at ley not one was attacked. Cows in milk, and especially those in full milk, were much more liable to the disease, and when they had it, they had it far more severely.

Mr. MILLINGTON, who had the charge of Mr. Tollemache's heifers, said that up to the present time they were very healthy. He himself had had 12 cases of pleuro altogether out of 20 cows. Early in October he had his stock inoculated, but eight cases had broken out since. There was no inflammation of the tail, however. Four had died, one was killed, six had recovered, and one was ill now.

Mr. JACKSON said he was quite of Lord Egerton's opinion that they were not in a position to recommend the absolute adoption of inoculation, but they ought not to lose the opportunity of trying a further experiment. He would move a resolution to that effect.

A resolution was then submitted to the meeting to the effect that, "Not being in a position at present to offer a decided opinion on the value of inoculation, the Secretary be empowered to purchase cattle for the purposes of experiment, and that one or two of the milking stock be left not inoculated, in order to institute a comparison."

The resolution was carried.

SMALL FARMS.

At a dinner at Cirencester the other day, Mr. EDMUND RICE said: A word or two has been said about the agricultural labourer. This morning I looked over some of my books, and I find I have some men living rent free and taking wages from me of from £70 to £80 per annum. We had just now a remark that the Irish were going to have a plot of land and a cottage to live in. Compare this with what the labourer takes from me. He takes from me five acres of the best wheat I

have grown in the year; he takes from me the same in value which is grown in the county of Gloucester on eight acres a-year—what used to be grown on 16 acres. It is perfectly ridiculous to talk of these little occupiers. They may perhaps grow enough to keep their families, but what are we to do with those who don't live in a cottage at all? I can say I do wish the landlords would sweep away many of their restrictions from the statute books, I feel convinced that if the

tenant had what liberty it is desirable he should have, he would not only improve his own estate, but he would improve the land and the labourer, and the country generally. As I am on this point, I beg to say that I perfectly believe that you can sow cereals on strong land without any farm manure.

Mr. BAZLEY said: Our population increases rapidly, but the opportunities for employment do not appear to increase in the same proportion. In passing through the country one can hardly feel being struck with the magnitude of the estates and the size of the farms. Now, I am not going to say anything in contravention of large farms. Where capital is available there is no doubt that large farms can be managed more profitably than small ones, and I know more than one estate where the largest farm is in all respects emphatically the best; but like the manufactory, like the railway, they must be conducted on sound commercial principles; and I venture to suggest whether it would not sometimes pay better for the farmer to be content with a less amount of acreage, to pay a less rent for that quantity, to cultivate it more fully, and to employ more labour and to pay less poor-rates. But there

are two kinds of capital required for this efficient cultivation. There is the tenant's capital, but there is also the landlord's capital, which is necessary for the erection of suitable buildings, and very often this latter capital is not forthcoming. I will venture to place my Lord Bathurst in the witness box on this occasion. You have heard his lordship deplore that many landlords who are called upon to make improvements are really unable. But why should this be so? The wealth of the country increases in a rapid ratio. The English people are ready to invest their savings in all sorts of schemes, at home and abroad, limited and unlimited; but as a rule the spare capital of the country does not find its way to the land. For the existing laws with respect to the transfer of land are such that in their effects, in many instances, the legal difficulties are insurmountable in the way of investing money upon it; but I do not hesitate to avow my conviction that the laws of strict settlement and entail are those which keep land in an uncultivated state (great applause), which lend a shadow of ownership when the substance has gone, which keep the land inactive, and prevent an increase in the employment of the people.

SUSSEX OR SUSSEX-DEVONS?

At the dinner of the Hurstpierpoint fat stock Show on the Thursday in the Smithfield Club week, Mr. GEORGE DARBY, of Marklye, said: I was very happy when I came here to-day to see so excellent an exhibition of stock, and I am glad to say we were equally fortunate this year at Hailsham, where we had one of the most magnificent shows we have ever seen. I have for nearly 50 years taken a great interest in Sussex stock, and I am not sorry to have this opportunity of saying a few words on the breeding of Sussex stock, to which our attention has been lately directed in rather a singular way. I have been very much amused by an assertion in one of the London papers that the great improvement in Sussex stock is owing to their having been crossed with Devons. As I have said before, I have been greatly interested in the breeding of Sussex stock. I have bred many myself, and I have been among the large herds of the county, and I can unhesitatingly say there is not one word of truth in it. I do not say for one moment that no one has not for the sake of an experiment crossed Sussex with Devon; but that the improvement in the Sussex stock of late years is in consequence of crossing with the Devon, or any other breed, I entirely deny. I will tell you what has improved the Sussex stock. I remember many years ago, when Mr. King and other breeders got together to puff off some of the large-hipped gentlemen of those days with narrow chests and light fore-quarters. I told them they never looked a bullock in the face, that they would not produce good animals unless they did so, and if they wanted to keep up the character of the Sussex stock, they must cross with animals which did not show such deficiency from other parts of the county. They took the question into consideration, and the consequence was, they went and got animals of good strong constitution from other parts of the county—from Rotherfield, Mayfield, Barton, and other places, from Mr. Selmes, Mr. Noskes, and Mr. Tilder Smith. They crossed their own stock with those animals, both being pure Sussex, and thereby improved the breed in those points in which it had formerly been deficient; and whoever said that crossing with Devon has produced that result, has simply stated that which is not true. At the same time there has been, I am glad to know, a great improvement in our stock, but it is mainly in consequence of the competition at these shows, which enables men to find out the faults in their own animals. We also sometimes see the result of crossing with other herds, and, as I told Mr. Marshall, I saw a cross here to-day that wanted crossing out. I am delighted to hear that there is such an excellent show of Sussex stock at Smithfield. I have not been able to get there yet, but, if possible, shall go to-morrow. For many years, as you may remember, justice was not done to our native breed at Smithfield. I had been a very old subscriber, and I said I would cease to give a subscription until our fair demands were granted. Shortly afterwards the Sussex classes were established. I want to know whether anyone here who has seen the small squabby Devons would like to see our breed crossed

with them. And I should be very glad if an opportunity were afforded for an investigation in which the breeder of stock from different parts of the county might take part—to show whether or not the improvement of Sussex stock has taken place in consequence of crossing with Devons.

Mr. JAMES DUMBRELL, of Ditchling, said: Last night I was dining in town with a few friends, and among them one of the judges of the Smithfield Club. We all agreed that the show of Sussex stock was remarkably good. My friend, the judge, said to me, "You quite understand the improvement is the effect of having the Devon breed brought into the county." I am not a breeder of Sussex stock myself, and do not pretend to know anything about it, but I took on myself to give that assertion an unqualified denial; and I threw the burden of proof on him, he having made the assertion—the proof that Sussex men have had Devons brought into their herds, and have crossed with them. I have asked Mr. Darby, Mr. Marshall, and every other breeder I have seen to-day, and they scout the idea, and say that, instead of importing Devons into Sussex for breeding purposes, the Devons would be improved by taking stock of us. [Notwithstanding this, the best fat cow at Hurstpierpoint, described as a Sussex, is entered as bred by Mr. James Dumbrell, of Ditchling.]

Mr. DARBY remarked that he did not say there were so good Devons; what he said was, that Sussex stock was not improved by being crossed with Devon. He had certainly seen some very good Devons, as evenly fattened as one need wish to see, in the market that day. It was a curious fact that some years ago a gentleman from West Sussex visited him at Marklye for the purpose of purchasing, and he did purchase a Sussex bull to send into Devonshire; but he (Mr. Darby) would not be justified in saying that all the Devon stock had been improved by that Sussex bull.

Mr. HAMMAR, the Vice-Chairman, said that he was not a breeder; but he fattened a great many animals in the course of the year. With regard to the two breeds, Sussex and Devons, if he wanted to buy lean stock at a fair, he should not buy Devons. He only wished there were more breeders of Sussex stock, that those who did not breed might have an opportunity of picking up Sussex steers.

At Horsham, Mr. CANE said he recollected fifty years ago, and that was a pretty good way back, and he knew pretty well every breeder in this county; but he didn't know anyone but Mr. Brandon who had crossed a pure Sussex with a Devon, and that was only one. With that exception, and he knew from one end of the county to the other, there had not been one crossed with the Devon stock.

Mr. LEE STREER said: It may be five-and-twenty years ago that I went to the eastern part of this county, and bought a cow of Mr. Fuller, of Mays, and from that cow all the animals I have exhibited have sprung. From these animals I have exhibited—two in London and two here to-day—all from the same stock. All these are from one particular lot of cows

down upon a farm of mine, and are all by the same bull. They are as perfect in their breed, and more especially in their constitution, than any other animals I have ever been possessed of. Why it is said that they have been crossed with a Devon, I know not; but if I may be excused for making a pun, it may be in consequence of a *cross* feeling of a reporter from some of those more enlightened papers. I think anybody who looks at our stock—and mind me, I do not cry a word against the Devons, I think it is a beautiful breed, because it is the most perfect of their kind that is exhibited, but let them keep them if they like—will see the difference. We all differ in our wants. We want power as well as symmetry and good constitution—animals that will do our work in more ways than one, and in a more effective manner than by showing them at our exhibitions. We want them to do anything that may occur; but I most emphatically deny that there has been any cross whatever. We never intend to have a cross.

The *Sussex Express* says: No doubt, of late years, there have been great and constantly increasing pains taken with our stock, and we have, as Mr. Darby said, gone further afield to supply the deficiencies in form. But there was no occasion for Sussex men to try a cross with the Devons to remedy defects in their stock. We need only look back to that olden time, when, as tradition has it, and no doubt the story is somewhere on record, Mr. Selmes offered to show one hundred Sussex beasts against one hundred of Earl Spencer's famous Shorthorns, to feel certain that at that time, perhaps the better part of a century ago, there was, at least, one great herd of the Sussex breed, which was of rare excellence in every possible respect; and that herd, though it might be neglected for

a time, must nevertheless have kept up in the far east of Sussex, a high standard of excellence amongst those of our breeders who were anxious to improve their stock. What has led to the present improvement, which is universally admitted by the press and the public to be unexampled in the history of breeding, is simply the giving Sussex stock a class at Smithfield, and the consequent compilation of the *Sussex Herd-Book*, for which we are indebted equally to West and East, to Messrs. Heasman, of Angmering, and Mr. E. Cane, of Berwick Court. In this way it is that pedigree has been more and more studied, and the value of particular strains of blood has been more accurately ascertained, and brought into play. It does so happen that in the very case in which it might be supposed that one gentleman was more likely than another to have risked the Devon crossing, there is a special ground for the belief that that has not been the case. Mr. Lee Steere, of Jayes Court, Dorking, does just live out of the county of Sussex; but one of his successful beasts was actually bred by Mr. Woodman, of Southease, who would never have dreamed of trying to improve his stock by a cross with Devons. Mr. Lee Steere, then, though living out of this county, has shown us what he can do, not only with animals of his own breeding, but with those actually bred in Sussex, and we cannot doubt that the same causes which made him successful with the one, led also to his victories with the other. What we believe is, that the Sussex breed is not only not crossed with the Devon, but as the improvement in it goes on, it will one day be found no mean competitor for that blue ribbon of the yard. [It will be remembered that only a year or so since a Sussex ox was within one, or at least two, of taking the Gold Medal of the Smithfield Club.—EDITOR, *M. J. E.*]

FAT v. DAIRY STOCK.

At the quarterly meeting of the Dalrymple Farmers' Society, at Dalrymple, there was a large attendance of members and others. Mr. Smith, Barnford, president of the society, occupied the chair. The subject for discussion was, "Whether does a Dairy or a Feeding Stock pay best?"

Mr. WILSON, Woodlands, read the following paper: This is a subject, in my opinion, of very great importance, and well worthy of being discussed by such a meeting as this. I am at a loss to understand how it was not taken up long ago, and that by abler hands. Whatever view we may take as to which of the classes is the most profitable, I am sure we shall all agree that it is second to none in all our agricultural departments. In the management of our respective holdings we must always keep prominently before the mind how we are to provide for our stock—the greatest quantity and finest quality of food; for according to the amount of stock we can keep on a given portion of land depends to a great extent our success or failure. It is a bad sign of an occupant to see a small stock on a common rotation farm. I would not give much for that party's success. But whatever be the number of our stock, the principal thing is to have them well-fed, well-housed, and properly attended to, with plenty of grass in summer, and an ordinary amount of house-feeding in winter, being always careful to guard against waste or extravagance, as there is a limitation in feeding that will pay to come up to, but won't pay to go beyond. We must always keep in view wherein the profit lies. But to come to the point at issue, whether a dairy or fattening stock is the most profitable; we are apt to look at certain things from certain stand-points, and according to the view we take we fix our opinions, and these opinions may not easily be changed unless something is brought forward to prove that we are wrong. We are sometimes ready to be biased by the thing we are most familiar with, but in every case we ought to discuss the thing within ourselves without partiality for either side, and not leave, as it were, a stone unturned. In times of strong competition for farms, with manure rising in price year after year, it becomes us to bestir ourselves if we are to exist at all as a class. We must be at the utmost stretch of our abilities, and have the kind of stock that is most profitable, although it be not the kind we have been used to. It won't do for us to move on in the old track, if there is a way that thousands have proved to be better

for us to take. I have tried both ways. I had my own suspicions at first, but I have found that a fattening stock is the most profitable. The expense of utensils and working a fattening stock is very small in comparison with that of a dairy, and the income per head will only in exceptional cases be in favour of the dairy. Whereas one third more in number can be kept of fattening than dairy cows on the same portion of land in summer. Therefore the balance comes to be greatly in favour of fattening stock. To make it as clear as possible we might take, for example, two parties entering into two farms at the same time. The farms are of ordinary size, alike in every point, and in the same locality. Both tenants start with their respective farms under very propitious circumstances. A prefers a dairy and B a fattening stock. A purchases for his grass land, at May, 1st 30 cows at £12—£360, and B 45 young cattle at £8, which makes £360. So far both are alike. Both have to see that their fences are secure before turning their cattle on their pastures. B has now only to see that his cattle are looked to once or twice a day during summer to see if they are all right; while A on the other hand has a great deal of expense and anxiety to encounter that B knows nothing of. In the first place he has to provide a considerable number and variety of utensils, for the proper management of such a dairy; and in the second place he must look out for a first-class dairy-maid, and I am sure all will be at one, that such an individual is not easy to be got. There must be two other women to assist, for where there are 30 cows you can't do with less than three women, whose board and wages will take about £60 a year—certainly they will do the ordinary house work, and if necessary one of them occasionally out-door work, which will reduce the above sum by about £20, leaving £40 for attendance on cows. Then to keep up this dairy at its original state must take about £20 a year for tear and wear of cows and utensils. I think the most systematical mode is to sell out a certain number of the oldest and least productive cows every year, and fill their places with queys in-calf. Still in this way there is a loss of produce, if we consider that a quey the first year does not give as much produce by one-third as an ordinary cow. We might adopt other methods, but the above, in my opinion, is the simplest in practice. To keep a cow one year will take about £11 6s., in the following pro-

portions, viz.: 24 for pasture, 21 for cut grass, vetches, and soft turnips, 23 for straw and hay, 85s. for turnips, and 30s. for beanmeal and bran. There is to be added 10s. for wear of cows, 4s. for tear and wear of utensils, and about 20s. for work, making a total of £13 5s. The dung might stand against the last two items and thereby reduce the expenditure by 30s. Still, after all, it is questionable if there are many dairy stocks in this district in ordinary seasons giving produce to that amount. Now, what is the use of a large income if our expenditure go beyond it? We are sure to get into difficulties, and may not get easily extricated. As to a fattening stock they are allowed to roam on their pastures at full liberty until the first or middle of October. They should then be brought into well ventilated byres and kept warm and quiet, the byres should not have more than eight or ten double stalls each, so that one lot may not be disturbed while the others are being fed, and care should be taken as to the kind, quantity, and quality of the food they receive so as not to allow them to fall off in condition, as cattle at first are apt to do when taken from pasture to stall-feeding. I think the most economical plan of feeding is to grow on the farm nearly all they require, and any one who has accommodation could not send their farm produce to a better market, according to present rates, than to consume it with feeding cattle. I would begin them with cabbage, which are in a good state for lifting at this time, and nothing suits the constitution of the cattle better at the first stage of stall-feeding. About half an acre will supply 45 cattle with two meals a day for two weeks at a cost of a little less than 1½d. each per meal. I would prefer boiled unmarketable potatoes for the third meal, mixed with a variety of stuffs, such as chaff, corn dust, and a mixture of beans, light wheat, rye, barley and oats, all ground up together, giving about 3lbs. of this bruised grain to each and every day. Under this treatment they are sure to improve from the first day they are housed. When cabbage and potatoes are done give them turnips instead twice a day, 28lbs. sliced raw, and once boiled, with the usual mixture of chaff and bruised grain. I approve, during the last six weeks or

two months, of giving them per day twice boiled and once raw food, and with double the quantity of bruised grain and a little oilcake, always giving straw or hay after each diet. To provide food as I have described, will take for pasture, from 1st May to 1st October, £23 10s., and for stall feeding from 1st October to 1st May, £10 10s., and 15s. for attendance and implements making a total of £13 15s. The manure will reduce the expenditure about 45s., which leaves £11 10s. to be added to 28 inland price, which makes £19 10s. for each animal. With ordinary markets they can be made worth fully that sum. The kind of stock I prefer for stall-feeding is either pure Ayrshire bullocks and heifers, or a cross between Ayrshire and Shorthorn. But I would not too partial to any particular breed. Get a well-moulded frame, be careful in making purchases, and there is less difficulty at the end. In ordinary cases we don't allow such a length of time for stall-feeding well-conditioned cattle, but by giving them seven months' stall feeding after five months' good pasture is the sure way to bring them to perfection. In a herd of any considerable size there is always a per centage that don't require much stall feeding. After good pasture, select these into a byre by themselves, and send them off as soon as ready, and fill their places with lean cattle; by adopting this plan a double profit may be gained at no extra cost of feeding stuffs. In deference to those who may hold different opinions on this subject to myself, I have endeavoured to give my views in as moderate a form as possible, and have only touched on some of the points, leaving plenty of scope for discussion, so that more light may be thrown on such a subject.

After the reading of the paper, a discussion followed in which the majority of those present took part. A few expressed themselves as in favour of the feeding system; some questioned if the land in the locality was suited for such a system, as far at least as regards its grazing qualities; while others thought that the better way was partially to adopt both methods. The greatest number, however, expressed themselves as inclined to keep to the dairying, so long at least as anything like present prices ruled.

THE TESTIMONIAL TO MR. JOHN CLAYDEN, OF LITTLEBURY.

At a dinner at Saffron Walden, there was presented to Mr. Clayden a testimonial in recognition of his services to agriculture. The testimonial took the shape of a centre-piece or candelabrum, a service of dessert dishes, six in number, a highly-chased waiter, and a watch, value £35.

Colonel BRIZE, M.P., the Chairman, in presenting the testimonial, said: The people at large appreciate fully Mr. Clayden's valuable services in connection with, and as a member of the Council of the Royal Agricultural Society, as a member of the Council of the Smithfield Club, as one of the committee, or as the honorary secretary, I should say, of the Agricultural Benevolent Association; as chairman of the Home Cattle Defence Association; and last, though not least among many others, as chairman of that great commercial and agricultural undertaking, the Islington Agricultural Hall. All who have been connected in any way in business matters with our friend wish now publicly to acknowledge his great services, and the great satisfaction he has given both to the shareholders and the public at large in these vast undertakings. I think I may say that had not Mr. Clayden brought to bear great diligence, great intelligence, great industry, and great business-like habits, those great undertakings would not have advanced to the extraordinary extent they have. And now what shall I say as to the local character of our proceedings? I will endeavour not to tax you, sir, by any personal allusion; but I will draw you, gentlemen, a picture of a man of genial disposition, of pleasing exterior, with a heart large enough to rejoice with those who do rejoice, and feeling enough to weep with those that weep—a heart warm enough to glory in the success and to sympathise with the misfortunes of his fellow-men—a man with a kind word ever ready in his lips for rich or poor alike—a man who cannot be spoiled by flattery—a man who cannot be put down by vulgar prejudice—a man always prepared to deny himself for others—a man of straightforward business-like habits, of uncompromising honour, and of unswerving integrity.

Mr. CLAYDEN said: What have I done to deserve this? I feel that it is due more to your generosity and kindness than to my own deserts; but I beg to say that no greater gratification could possibly be felt by any man than to know that he enjoys the respect and esteem of those among whom he moves, and in no way could that be more fully and forcibly exemplified than by your presence. Gentlemen, I trust I shall ever be sensible of your kindness. It is true that I have tried to advance agriculture in every way I possibly could; but when I look around this room, I see many friends who on all occasions when I have requested it have given me their counsel, and, when it has been needful, they have not refrained from opening their purses. Without their aid I should not have been able, on many occasions, to serve your cause in any effective degree. I trust I shall continue any efforts I have made, and that I shall still be able to apply to my friends in this neighbourhood, whose confidence I have the good fortune to possess, for their assistance when anything beneficial to agriculture can be done. It is true that from a boy I have been very fond of agricultural pursuits, because I have looked upon agriculture as one of our oldest institutions, and one of the best interests of the country. I have ever thought that the land in this country should be farmed in such a manner as to produce the utmost for the country in general, and the utmost benefit to the occupier and the owner. It falls to the lot of very few men to be presented with such a testimonial as you have thought proper to offer me this evening. It was more than I could in any way expect, and your great kindness has almost overpowered me.

Mr. C. S. READ, M.P., said: If I might enlarge on one portion of the services that Mr. Clayden has rendered to the agricultural interest, I would specify that of his great efforts and exertions to secure for us what we must eventually have—separate markets for the sale and slaughter of foreign stock. And, now, sir, I believe that the measure of inefficiency in the veterinary department of the Privy Council has almost reached

its climax. Let me just review for one minute all that they have done to the agricultural interest. Some years before there was any special department the government employed certain professors, who were supposed to watch over the health of our flocks and herds. It was these professors who first told us that foot and mouth disease was atmospheric—it was these professors who, when we had the misfortune to have the sheep-pox, told us the best way of getting rid of it was inoculation, whereas we know if you want to keep and extend it you must inoculate, and if you want to exterminate it there is nothing like slaughter and isolation. It was these professors who were sent out by government years ago to watch the cattle plague, and they came home and told us that foreign countries took such special precautions against the spread of this disease, that it would be impossible for it to come here. It was Professor Gamgee who told us differently, and that whenever we received direct importations from Russia the cattle plague would come. Well, it did come, and although the authorities of the government knew perfectly well what it was, they disregarded the universal request that was made from the whole country to close the London markets, and they allowed that pestilence to irradiate from the London markets to almost every county in England. I say, sir, further than this, that the government of the day, or rather the officials of the day—and they are officials still—set about work at that time to kill our stock without awarding us any compensation, and when the cattle plague commissioners made a report and said, "If you cannot give compensation you have no right to kill," they withdrew that order and allowed the cattle plague to run rampant over the land, and it was not until such time as parliament took up the matter in hand and used vigorous measures that it was stamped out. Now, sir, I say that these permanent officials at the Privy Council Office are somehow or other totally set against the agricultural interest, or why should they so persistently and energetically strive to prevent the establishment of these foreign markets? When the government changed, and Lord Robert Montagu was at the head of affairs—a talented and clever man who had not turned his attention particularly to cattle—they crammed him and primed him in such a manner, that he made a speech against separate markets, which has done more I believe to injure our cause than has been done to benefit it by all the good and excellent speeches that that nobleman has made since. And then, when Mr. Forster went there—a man who was well inclined to the agricultural interest—they would not allow him to accept one

single amendment, although they have since embodied some of these in their orders. But what have they done? They told us that when this wonderful bill was passed we should require no more Privy Council orders. No sooner, however, did the bill become law than they issued orders about as long as the bill itself, and about a month after that they put out another order, making all the restrictions of pleuro-pneumonia apply to foot and mouth disease. It is a very easy matter indeed to shut the stable door, but now that that mad-horse disease is galloping all over the country, it will take a precious long time before we can curb and confine him again, and I do say that the conduct of the government, when they knew that they had this foot and mouth disease raging on almost every part of the continent, in allowing foreign sheep that had been associated with diseased animals to go all over the kingdom, was something that calls for the strongest reprobation. Why, what have we, the farmers of England, done that we should have the floodgates of this disease opened upon us? We could have kept the disease out, and would have done if we had had our minds. I will take my own case. What have I done that I should have 70 or 80 cattle nearly fit for market now thrown back at least six weeks, to say nothing of the sheep I have had affected with this most tiresome disease—what have I done that I should be robbed of at least £200? I hope and trust that when the poor artisans and the unemployed labourers happen to get a bit of meat again, they will remember that it is the authorities at the Privy Council Office that have increased the price of meat at least 1d. per pound, and that they will not say it is the bloated farmer who gets all the profit, for I can assure you, speaking for myself—and I think I may speak for you too—that if we have fruitful seasons and healthy stock we would rather sell meat at 7d. a lb. than sell it at 9d. when the advance is caused by disease. I believe, sir, that if a body of roughs were to go down to the Privy Council Office, at Westminster, smash the windows there, break the furniture, and chase the officials so that they had to take refuge in the Abbey, it would have more effect than all the facts and arguments that we have for so many years put calmly and temporarily before them. And why do I say so? Because we are told that nothing can be done in this our time except it is urged with a little physical persuasion as well as moral force.

The company was chiefly made up from the district, and the other speeches addressed to local topics.

THE PRODUCTION OF CHEESE.

The production of cheese is becoming an important branch of our agricultural industry, and the demand both for home consumption and for export is every year increasing. Factory-made cheese will compare favourably with the best of English and Dutch manufacture. The business of making cheese in the United States has long been profitable to the farmer and dairyman; and that it will continue to be so for years to come seems highly probable, in view of the limited crop and the growing taste of our people for food of this description. It is estimated that there are in the United States and Canada 1,000 factories, whose average weekly production is equal to 117,250 boxes. The cheese made in the United States and Canada in 1887 reached 215,000,000, and in Great Britain 179,000,000 pounds. The consumption in America during the same period amounted to 160,000,000 pounds, and in Great Britain to 400,000,000 pounds, leaving a deficiency over the joint production of the two countries of 75,000,000 pounds. This deficiency was supplied by Holland and Belgium. The principal States engaged in the manufacture of cheese in this country are New York, Vermont, Massachusetts, Pennsylvania, Illinois, Ohio, Michigan, and Wisconsin. Western New York, the Western Reserve, and some sections of Illinois and Michigan, enjoy a deservedly high reputation for the excellent qualities of the products of their dairies. England has long been justly celebrated for the abundance and superior quality of its cheese. Cheshire, Stilton, Derbyshire, Suffolk, and Cheddar are the best known varieties. Gouda

cheese, the best made in Holland is very pungent, which preserves it from mites, and this pungency is attributed to the fact that muriatic acid is used in curdling the milk, instead of rennet. Parmesan cheese, made at Parma, in Italy, owes its rich flavour to the fine sweet herbage of the meadows along the Po, where the cows are pastured. The best Parmesan cheese is kept several years, and none is sold until it is at least six months old. Swiss cheese is made, in part, of skim milk, and is flavoured with fragrant herbs. They usually weigh from 40 to 60 lbs. each, and are exported in casks, each of which contain ten cheese. Westphalia cheese derives its flavour from the curd being allowed to become soured before it is compressed. Dutch and Swiss cheese contains, according to chemical investigation, from 26 to 40 per cent. of nitrogenized matter, considered the most nutritive constituents of food. The best cheese is from 25 to 100 per cent. more nutritious than bread and meat, which contains only about 22 per cent. of nitrogen. The superior qualities of cheese has been repeatedly proved by the experience of labourers in those countries where it forms one of the principal articles of food. To delicate stomachs cheese is objectionable, on account of its slow and difficult digestion; but to individuals of great physical strength, it is a healthful and agreeable article of consumption. In combustible or heating qualities, cheese is only exceeded by oil, butter, and like unctuous substances.—*New York Mercantile Journal*.

THE CHEESE FACTORY QUESTION.

At the annual meeting of the members of the Derbyshire Agricultural Society, beyond the formal business of the meeting, it had been announced that Mr. Crompton, who presided at the last annual dinner of the Society, would bring before the members the question of producing cheese on the factory system, which prevails largely in the United States, which has of late been the occasion of considerable discussion in South Derbyshire. The interest taken in this question led to a very large attendance. Dr. Hitchman presided.

Mr. CROMPTON said for an agricultural society there could scarcely be found a question of greater or more pressing importance at the present time than the system of factory-made cheese which was adopted in the United States. He thought every one of them who had bestowed the slightest study on the subject, must feel that the people of that country had in a very short period made gigantic strides in the mode of making cheese. It had raised the value of the product so much that it did become them, as English dairy farmers, to consider the means by which those great and important results had been achieved. He did not know that he could give them much information; but he had, in company with their secretary, Mr. Smith, endeavoured to get some information on a subject of such importance. As far as he was able, he would readily and gladly place it before them. In the first place, they would have to consider who were the great antagonists with whom they had to deal, and what class of men they were who now competed with them in the supply of cheese for this country. The American mind possessed all the endurance and all the persistency of that of the Englishman; peculiarly sharpened by the circumstances into which they had been placed. The fact of their having been placed in a new country, which they had had to subdue and civilize, and out of it to provide for their various wants, had made the Americans quick in acquiring knowledge, and successful leaders in most of the clever and important mechanical inventions of the present day. In a few words he would tell them all he had been able to learn of the factory system of making cheese, but he thought he might use another word and call it the co-operative system of cheese-making. When in Liverpool a short time ago, he was in company with one of the largest importers of American cheese, and he had heard him make a remark which struck him very much. "In early life," the gentleman said, "I was a large buyer of English cheese, and I was really driven to give up that particular branch of trade by the great want of uniformity in the class of cheese I had to buy. It became excessively laborious; there was an absence of uniformity in colour and quality and other material points, which rendered it a very difficult matter to buy cheese in large quantities. But when, on the other hand, I turned my attention to the Americans, and became a large importer of American produce, I found this advantage—that they possessed a very great share of persistent uniformity in the cheese they produced." If this system of co-operative cheese-making should bring amongst them an improvement as to make, and a uniformity as to colour and quantity of cheese, it would be the means of greatly benefiting the dairy farmers of this county. It became them who had an interest in this subject to deal with it. In the districts of America, where the cheese factories were situated, there was no material difference, so far as he understood, in the land or the circumstances attached to dairy farmers as compared with this country; but there was this difference, that instead of being tenants, as a rule they were possessors of the farm, and instead of following the lame and halting system here persevered in, of each dairyman having his own particular dairy, and his own plant for making cheese, and keeping very far behind as far as perfection in the mechanical arrangements necessary for the purpose, the Americans had marked out their districts, erected their own wooden buildings, which they called factories, and to those buildings they sent their milk, which was received by weight. Each contributor of milk to these factories received a carefully-kept account of the number of pounds of milk which he had sent to the factory, they purchased the best plant, and they obtained the best and

most educated of dairymen they could to superintend the making of this cheese. The result of this was most satisfactory. They were told that the Americans found no difficulty in carrying out this system, and, in fact, that they regard any other system as unworthy of their consideration. Now, what would be the result if they adopted this plan here? They might have many difficulties to contend with. They could hardly imagine that any tenant would like to spend his money in the erection of such factories. That was one difficulty which stared them in the face; but they would be aware that a large number of farmers who had invested considerable capital in their undertakings, and who had wives and families in that position of life in which they could not be expected to give great and laborious attention to the art of cheese-making, had to fall back upon hired dairymaids, who were not noted for the production of a high class of cheese. This class of farmers would be relieved from the necessity of having their cheese made at home. It would relieve many from this difficulty, which had to his knowledge deterred many men of large means from engaging in farming, and it would relieve those who had engaged in it from that which had been a considerable disadvantage to them. How would it affect the small holder, who had so many disadvantages to contend with? As a rule he had very inferior premises in which to make his cheese; his plant was inferior; and he had to contend and compete with those who were better situated than himself. If this system were established it would put him on an equality with the best class of dairymen. It would not only do that, but it would utilize the milk of a number of small holders which were not doing their full duty to the public, so far as produce was concerned, owing to the want of proper conveniences at home. It would bring that class of milk to a uniform and good quality of cheese, and would be a considerable benefit to the small holders of land. It would do another thing. They could hardly go into an English farmhouse, where the farmer's wife superintended the cheese-making, and not find that she was suffering materially in her health. They would find in most cases that the wife or the daughter of the farmer, who was employed in this arduous and wet occupation, suffered much from rheumatism. The factory system would, if adopted, free them from this drudgery. Then they came to the question of how it would affect the landlord, and here he could not but see that the landlord must be materially benefited. In the first place it would be an act of economy. Instead of being the possessor of a large number of dairy-farms, on each of which he had to erect a building for cheese-making, by erecting one building rightly placed, or at the most two or three buildings rightly placed, he would provide better accommodation for the purpose than had hitherto been provided; and he would be saved that large and material expenditure he had been put to in placing dairy buildings on each of his farms. But beyond that, if this system were found to add to the quality of the cheese, the improvement would add to the value of the land on which it was produced. It stood to reason that the land on which the old system was being carried on was not producing its full results because of the inefficiency of the present system. He believed that this system which he was proposing would be the means of giving a large filip to the value of land, it would benefit the tenants be they great or small, and also the landlords. If this system did not become established, the general public, who were the cheese-consumers, would have to be contented with an inferior article or look elsewhere; the makers of the bulk of English cheese would have to content themselves with producing an inferior article and taking an inferior price; and the landlord would have to rest contented to see his land not doing its full duty, and the public with not being supplied from it with such a quality of this staple food as it ought to be. England would be obliged to take a fourth-rate position among the cheese-making countries of the world. Some gentlemen there might say, "But we are satisfied with the price of cheese as it is," and point to some which fetched a high price—some as high as 78s. per cwt. But in comparing their best prices with that

of the American factory-made cheese they would find that the Derbyshire cheese fetched 78s. per cwt. of 120lbs., and if they went to the Liverpool warehouses they would find piles of American cheese at 70s. per cwt. of 112lbs.; that was equivalent to nearly 76s. of our Derbyshire weight. They found that the English champions of cheese-making, who came before them and said, "We are getting the very best price" obtained 78s. per cwt., whilst the American farmer, who made his cheese thousands of miles away, had it brought to Liverpool, where he obtained 75s. per cwt. for it, reckoning not by the smaller weight but at 120lbs. He had been in London a few days ago, and he found in a warehouse there vast quantities of American cheese which, instead of 70s., ranged from 73s. to 74s. per cwt. of 112lbs. When he said, "Why do I find such a discrepancy between that imported into Liverpool and into London?" he was told that, as a rule, provisions obtained a higher price in London than in the country, because the class of shopkeepers there were particularly anxious to get the very best quality of articles they could obtain. The fact that American cheese was selling at 74s. per 112lbs. in London warehouses, he thought spoke with great force. The gentleman who informed him of these facts in London—he did not like to mention his name; but if he did it would be known to nearly every one of them—had told him how much he had been struck by the contrast between the English and the American dairymen. "If," said he, "you go to an English dairyman and point out any defect in the result of his system of working he will turn round on you and say, 'Don't put yourself in a pet; if you don't like it you need not take it.' If, on the contrary, when I have been among the American dairymen I said, 'Your colour is not up to the mark,' or 'I can make a suggestion,' the answer would be, 'I am obliged to you for the information, and shall thank you for any suggestions you can make.'" That showed the difference between the old-fashioned English dairyman and the new-world American factory cheese-maker. The one was content to rest with the old-fashioned system, whilst the other had the intelligence to improve his make of cheese, and so place it in a higher and better position. He thought that spirit must spring up among English dairymen if they were to carry on with success this most important manufacture. With regard to the selling of the different kinds of cheese, he had in his hand a letter from a very large cheese seller, who was not a wholesale but a retail seller, who lived in the Midland counties, and who sold over his counter no less than 40 tons of cheese yearly. He had asked him what proportion the American cheese bore to the English cheese he sold, and he mentioned that they were considering the advisability of imitating the Americans in their mode of making the cheese. That gentleman wrote and said, "I have to say that I think the proposed alterations in the mode of making cheese would be attended with great success. My purchases of English cheese are confined to Warwickshire and Leicestershire; I do not deal in Derbyshire. Of these two classes of cheese I sell about 20 tons per annum, and about the same quantity of American cheese. The sale of the latter has very much increased, and if the quality continues to improve as it has done for several years past, the English factor will soon become independent of the English manufacturer, who unless he improves the quality of his cheese, must give way before the American. At the present time my American cheese is worth 70s. per 112lbs. wholesale, which is equal to 75s. per Derbyshire cwt." He also found from a very large seller at Leicester, who conducted a wholesale business, that he sold from one-third to one-half of American cheese as against Leicester and other cheese. Thus the American cheese was successfully intruding where it might be expected to be most easily defeated, in the county-town of Leicester. That seller said that "since the factory system had been introduced into America, more regularity had been attained in the cheese. It had been scientifically made, and that out of thousands of cheese scarcely one had varied in colour and quality, which could not be said of the best dairies in England." Then he came to our own county of Derby, and in a town which was gradually springing into importance, from the fact that it was situated in the heart of the mining districts of this county, he found the position of English cheese still worse. He knew no town where genuine bread and cheese was more fully supplied to the labourers than in Chesterfield. The wages which were paid into the pockets of the

miner and labourer residing in the neighbourhood amounted to more than £25,000 a fortnight, and what with the facilities afforded by the railway, which brought the miners into the town from Clay Cross, Staveley, and other large collieries on alternate Saturday-nights, when they received their pay, the bulk was spent there in provisions. It showed what the taste of the collier as regarded cheese was very clearly, for a seller in the town said, "I sell 30 tons of American cheese to one ton of Derbyshire cheese." That was a very large proportion. He regretted exceedingly that this meeting was held on Christmas-eve, the busiest day of the year for the shopkeeper. Had it not been so, they would have had the attendance of several of the largest and best known sellers of cheese in Derby at the meeting, to state what was the proportion of American to Derbyshire cheese they sold. He had asked several, and all, with one exception, said that they might fairly put their sale down as about one-half of American, as against one-half of English-made cheese. If that were the state of things in Derby, it behoved them to consider what they ought to do to ensure the milk of this large milk-producing district making the best quality of cheese, and so keep out their American competitors. He knew of no system which could meet this emergency with a greater probability of success than the American system. It was important, at any rate, that they should give the system a fair trial. No American could get his cheese from the factories landed in London or Liverpool under a charge of 8s. or 10s. a cwt. If they obtained 70s. per cwt. for it at Liverpool, it would net to the producers in America about 62s. at their own factories. That was the only point where English dairymen had the advantage of them. But still, having adopted the system of factory cheese-making, they could do it so cheaply, so expeditiously, and so uniformly good, that they were gradually assuming the first rank in the world as cheese-makers; and it, was the duty of English cheese-makers to meet the Americans as far as they could, with their own weapons, and set about, with perseverance, that system which had wrought them so large an amount of success. Mr. Smith had reminded him of an important point. A very eminent importer in Liverpool had said to them, "Well, look at the variation in the price of English-made cheese. Cheshire cheese, for instance, is declining in quality, and the bulk is very inferior. If you go to Cheshire you find a variation in the price of middling cheese from the very best, 30s. per cwt., and it is not so much less in Derbyshire." He thought there was as much variation as that in Derbyshire between middling and best quality; whereas two-thirds of the American cheese made did not vary more than 3s. per cwt., and it never varied more than 6s. It proved at once that the most was made of American milk, and it proved as satisfactorily that they did not make the most of English milk. He had a statement in his hands which showed the number of cows whose milk was made into cheese at one factory. It was called "Akerly's Cheese Factory." The whole number of cows was stated at 750. He supposed that this was the largest number whose produce found its way into the factory at any time, but the average number was 600. What we should call "shareholders" they called "patrons." Having got a certain number of patrons, they erected their building, which cost from £300 to £500. It was built of wood, and was not very elaborate, consisting sometimes of only two rooms, the one down-stairs for making cheese, and the other up-stairs for storing it. They had no steam power; they had only a steam boiler to raise their curd or water to the right temperature. A running stream of water was essential. They selected six, of their best men whom they called their managing committee, and out of them they selected two most able to go into the trading world and sell the product of their labours for the best prices they could get. This factory commenced work on the 30th of March and closed November the 16th, thus being in operation 231 days. They received during that time 1,310,540lbs. of milk, and 246,831lbs. of cheese was manufactured from it. When sold the produce realised £7,870. Each cow averaged £13; they would be best able to judge whether the cow did its duty. The patrons paid for manufacturing £987; paid for carting £71; and they appeared to have made a present to their directors of £39, possibly for travelling expenses. The worst thing against them was that they had no roads worth being called by that name. The person who had furnished him with this information described the roads as very primitive and bad, and declared that he would sooner

ride 30 miles on an English road than seven on an American one. This person also gave an instance of American sharpness. He had travelled to a factory and bought a quantity of cheese. He went at once to another at some considerable distance, hoping to purchase cheaper, and although he lost no time on the way he found when he arrived that they knew the price he had just paid, and he gained nothing by his arduous journey. He mentioned that to show how wide-awake they were. The profit left to divide in the factory, whose figures he had just quoted, was £6,772, and the names of the gentlemen were published who received the amount between them in proportion to the number of pounds of milk contributed. Those who sent a small quantity had equal advantages with those who sent a large quantity, every one being paid according to the milk he had sent, some sending under 200lbs. in the year. The cheese was disposed of in America very much as it was in England, and they had agents in London, Liverpool, and elsewhere, to whom they consigned a large quantity, and they remitted back to them the results. He believed that was a very good type of a factory. Looking at this state of things, they must come to the conclusion that these are not days to go to sleep. This factory system of making cheese had spread from the United States into Canada. Sweden was following their example, and Northern Italy was also becoming a large producer of cheese uniform in quality, which alone could be achieved by this co-operative system of cheese-making. There was no factory for cheese-making in England. The subject had been mooted in Cheshire some time ago, but no satisfactory result had been arrived at. One cheerful circumstance about the subject was that there was more cheese consumed in England and America than was manufactured by both those countries. The American consumption was about 160 million pounds, against 300 million of pounds consumed in Great Britain. Formerly the Americans did not consume cheese to any great extent, because they had not time to make it. They had got the heavy work of clearing and subduing the land to do, and had to content themselves with animal food, which required less time to produce, and the cheese they made was at first inferior. But as they overcame their first difficulties, they found the value of cheese as an article of food, and so improved their make; and so impressed were they now with its nutritious properties, that they were about to supply the army with it. Mr. Crompton also stated, in answer to a question, that a certain number of pigs were attached to some factories, and were fed upon the whey. When sold the profits went to swell the dividends of the "patrons," and was divisible upon the milk.

Mr. GREATORREX said that with an income of about £10 per cow, which he estimated would be the amount, from Mr. Crompton's statements, he would not be able to pay the rent of his farm, cultivate it in the way he did, and maintain his family. Many of the farmers in his neighbourhood—Burton-on-Trent—had not farms of 200 acres, and he would not hesitate to confess that he could not keep his family in idleness. They would be forced to do something. He would be very glad indeed to hear the opinion of his brother-farmers upon this difficulty. £10 per cow would not pay them.

Mr. NUTTALL thought Mr. Greatorrex must have been labouring under some mistake. Mr. Crompton said that £11 was left for each cow, from the price at the factory, after selling the cheese at 60s. or 62s. per cwt. That would be the price they would receive, after deducting the freight to this country, but the English farmer would get 75s. to 80s., which would give about £13 for each cow. That would, he thought, be perfectly satisfactory. Then there was whey or bacon, which would produce £2 or £3 each cow.

Mr. WEBB observed that there was also the calf.

Mr. NUTTALL was satisfied they must resort to some such system as that adopted by the Americans, for he was not satisfied to be beaten as they were now. All they had to decide was, he thought, the system to be adopted in building factories of this nature, whether by the co-operative system or by the landlords. Such a step was now as necessary as the adoption of the mowing and reaping machines. Machinery had done much to improve farming; but, so far as it had been applied to cheese-making, it had not in any degree improved its quality. He hoped there would be no unnecessary delay.

Mr. MURRAY said that the establishment of a factory, to be successful, must be on the co-operative principle. It would not succeed as a commercial undertaking, in which case the

farmers would have to pay interest on the capital. There were plenty of farmers possessed of sufficient intelligence to manage a factory. He anticipated that the landlords would make a start by providing a building, and then he saw no difficulty.

Mr. CROMPTON and others said they were all in favour of the system being carried out on the co-operative principle.

Mr. COLEMAN called the attention of the meeting to a scheme he had drawn up to apply to the first factory only. He suggested the factory be for the produce of not less than 400 cows. The consent of a sufficient number of farmers to be obtained before the erection of a factory is attempted at any place. The farmers to bind themselves to supply to the factory the whole of the milk from a given number of cows, and not to dispose of any of their milk to any one other than the factory. The agreement to be for one year only. The farmers to deliver their milk free of cost to the factory twice each day, at hours to be fixed by the managers of such factory. The produce of the factory to be divided amongst all persons according to the quantity of milk supplied, or by such other mode as the committee of management may think proper. The management to be by six committee-men, to be chosen from those farmers who supply milk to the factory, and one or more persons not being farmers, to be appointed by those who built the factory; this committee to appoint their own manager and other servants. He put down the cost of the erection of the building at £1,000, for they could not expect to build so cheaply as in America, and the plant and machinery he estimated at £200. The owner of the land on which it might be decided to erect the first factory, to find one-half the cost of the building, the other half to be subscribed by those landowners and gentlemen who may be interested in the movement. The buildings, plant, &c., to be the property of the landowner upon whose estate they may be erected; and he shall not charge any rent for the factory for the first three years, or until six other factories are at work in the county. The disposal of the produce of the factory to be left entirely in the hands of the committee of management. The promoters to guarantee the farmers against any loss which may arise in the manufacture of the cheese, should such loss be incurred through the factory and not through the committee or their manager. The promoters to provide a guarantee fund, to admit of the cheese being held in the factory until it is ready for the retail dealer, who should be the person to whom the managers of the factory must in all cases sell their produce. The produce to be sold by the cwt. of 112 lb., instead of 120 lb. as is now the case. Should any dispute arise as to the liability of the promoters, or any other matter between them and the committee of management, any such matter in dispute to be left to the arbitration of —, and his award to be final and conclusive. By adopting the co-operative system the farmers would get every penny the milk brought in.

Mr. CROMPTON said he had a letter from a proprietor in an American cheese factory, a Quaker, to one of his friends in England on the subject of cheese-making. It read thus: "Yours of the 28th inst. is to hand, and contents noted. In reply to your interrogatories I would say, the night's milk having been kept at about 65 degrees, we draw the morning's milk into the same vats, and immediately heat to 82 degrees; then add the annatto, and rennet sufficient to coagulate in about 30 or 40 minutes. As soon as the curd is solid enough to break clean over the finger, draw a curd knife, containing thirty blades one quarter of an inch apart, gently through the vats lengthwise, cutting the curd into thin slices. Wait a few minutes until the curd settles into the whey a trifle, and then cut across the vat the same as before, lengthwise. Then cut a few times lengthwise, but not to make the curds firmer than chestnuts, or perhaps kernels of Indian corn. Next put on the heat gently and equally, until the temperature rises to 88 degrees, stirring very gently in the meantime with the hands and wooden rake to keep it from settling on the bottom. Then let it stand from one half-hour to an hour. Then continue to heat just as before, until the thermometer shows 98 degrees. After this let it be quiet, with an occasional breaking up with a rake, and keeping the heat at the same point, until the whey shows decided acid, but the curd is sweet. The curd will now break dry, instead of moist and clammy; it will squeal between the teeth, and will feel hard and like shot instead of doughy. On pressing it in the hand it will not adhere in a lump, but again fall to pieces by its own elasticity. When these

phenomena appear, syphon off the whey forthwith pretty closely, and dip the curd and remaining whey into a large curd sink, and spread it evenly and thinly. After draining a few minutes most thoroughly, stir in $3\frac{1}{2}$ " salt, if in the spring, or 3" if in hot weather or fall. Let the mass cool to the temperature of the atmosphere, and put to press, pressing gently at first and harder in 15 or 20 minutes. In one hour turn and bandage and press heavily; turn the screws down again at night, and as much as you can in the morning. Remove from the presses before noon, and take to the curing-house, and oil the top and bottom. Turn on the ranges, and rub with the hand and arm every day for three weeks, greasing occasionally if they become dry and inclined to crack. After this turn every other day until sold. Keep the curing-house as near 70 degrees as may be day and night. In 20 days they will be passable; in 30 days they will be ready to ship; and in 40 days they will please the palate of lovers of fine cheese. All this is said on the supposition of having clean, sweet, pure milk at the commencement."

The Hon. E. K. W. COKE said, although he was for going ahead, he did not wish them to do so too fast. He was glad to see that Mr. Grestorex had risen and stated his difficulty, for he remembered that there were many in this county who did not see their way clear to support the factory system. He had met Lord Waterpark a few days before, and his lordship, who had just returned from America, and had heard nothing of what they were doing in Derbyshire, expressed to him his surprise that the admirable system of factory cheese-making had not been started in England. He thought Mr. Grestorex's objection had been answered satisfactorily by Mr. Nuttall. The system succeeded admirably in America, and he saw no reason why it should not answer at least equally well in this country, where they had advantages both in the climate and the roads for the conveyance of milk, for he could speak to the bad character of those in America. The question was certainly a landlord's and a tenant's question.

Colonel WILMOT said they had been told that in some cases large bacon factories were attached to the American cheese factories. Would the profits from them be divided in the same way as the profits from the cheese?

Several members answered that it would be divided in the same way, and Mr. Crompton observed that in some cases the whey was returned to the farmers in proportion to the milk they furnished.

Mr. CROMPTON said the necessity of a guarantee fund, which Mr. Coleman had urged, had also struck him, as farmers might be deterred from sending their milk to a factory in consideration of the risk which might be supposed to attend a new undertaking. He suggested that a number of gentlemen might enter into a guarantee in shares of £50 or £100, and thus make themselves responsible that under any circumstances the farmers who had sent in their milk should be paid not less than 66s. per cwt. for the cheese the milk ought to have made.

If the system was tried and turned out an entire failure, which was very improbable, then everybody who had contributed their milk would receive 66s. per cwt.; and if, on the other hand, this system resulted in a higher class of cheese, and brought a higher price, then the gentlemen who had made the experiment and contributed their milk would have the benefit, and the proceeds would be divided amongst them.

Mr. COLEMAN said he had at first thought of fixing that amount, but afterwards thought that those who produced a superior cheese would hardly be satisfied with that guarantee, but Mr. Crompton replied that the farmers must incur a little risk.

Mr. GRESTOREX said that a great deal of his objections would be removed if the co-operative system were adopted, and those who supplied the milk got the whole of the proceeds, for he acknowledged there was no more slavish work on a farm than devolved upon a farmer's wife and daughters if they did their duty; and if they did not, the husband would suffer seriously. The female portion of his household were at work in connection with the dairy, after all the rest, including himself, were at rest. In case of the sickness of the female members of his family, he had himself to turn the cheese regularly.

Mr. CROMPTON stated that the quality of the milk supplied was tested by a lactometer, and so strong a hold had the question taken on the farmers in the United States, that it was a penal offence for any one to send to the factory any milk diluted with water or dirty, or otherwise unfit for use. An Act of the Senate passed in 1865, empowered two magistrates to fine a person convicted of such an offence in a sum not less than 25 or more than 100 dollars.

Mr. MURRAY hoped that the coming summer would not pass away without a factory being established.

Lord VERNON would suggest that it would be a desirable thing to appoint a committee composed of those gentlemen who had acted in this Society for a considerable time, and especially of all those who had taken an interest in the subject. His own idea was, and had been before he came into that room, that a system of co-operative factories was the only one that was practicable, and he ventured to say that to his tenants at a rent dinner two days before. He certainly had not thought of the question of a guarantee, but he thought sufficient had been said to show that the point was deserving of serious consideration. He begged to propose that the members of the committee he suggested should be Mr. Crompton, Colonel Wilmot, the Hon. Mr. Coke, Mr. Murray, Mr. Coleman, Mr. Grestorex, and Mr. Sims, and that they report as soon in February as possible.

The names of Lord Vernon, the Mayor of Derby, Mr. C. Canner, Mr. Nuttall, Mr. Faulkner, Mr. T. Travis, Mr. Walker, and Mr. Jacob Smith having been added to the committee, the motion was passed.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—The attention of the Council of the Royal Agricultural Society having been drawn to the increasing adulteration of manures and feeding cakes, especially guano, nitrate of soda, ground bones and linseed cakes, Dr. Voelcker has been requested to submit to the monthly Council in March, June, and December, a report on the various samples forwarded to him by members of the Society, so that such report, together with the names of the dealers who supplied the substances analysed, shall, if the Council think fit, be published in the agricultural journals.

At the monthly Council Meeting held on December 8, Dr. Voelcker presented a report in accordance with the above resolution, and I now beg leave to forward you the following extracts from it, and to request that you will publish them in the next number of your paper,

I have the honour to be, sir,

Your most obedient servant,

H. M. JENKINS, Secretary.

Analysis No. 1 represents the composition of a sample of guano which I analysed for Mr. C. C. Hamilton, Harlstone.

This analysis was produced by Messrs. Perkins & Sons, Auctioneers, of Southampton, at the time of the sale. No. 2 shows the composition of a material sent to me as a sample of the bulk, bought by auction by Mr. Horace Leggatt, Brown-wich, Titchfield, Hants:—

	No. 1.	No. 2.
Moisture	15.28	4.66
*Organic matter and salts of ammonia	46.41	22.22
Phosphate of lime and magnesia (bone earth)	24.65	8.28
Oxide of iron and alumina (clay)	—	11.84
Sulphate of lime	2.28	43.62
Carbonate of lime	—	.70
Alkaline salts	8.71	1.70
Insoluble siliceous matter	2.87	7.08
	100.00	100.00

*Containing nitrogen

...	12.06	1.99	
Equal to ammonia	...	14.66	2.42

Instead of $14\frac{1}{2}$ per cent. of ammonia, as in the analysis No. 1, No. 2 barely contained $2\frac{1}{2}$ per cent. The latter further con-

tained scarcely one-third the amount of phosphates which is found in genuine Peruvian guano, and appeared to be principally made up of gypsum and a yellowish coloured loamy soil.

The next illustration of a spurious guano was furnished in a sample sent for analysis by Mr. Alexander Howden, Marston Court, Pembridge, Herefordshire, who informed me that he bought it of Messrs. G. C. Dobell & Co., of Liverpool. These gentlemen maintain that this is guano genuine as imported. This may be quite correct, for they may have imported a spurious article; nevertheless it is not a genuine guano, but a compound resembling guano in external characters, and having but little else in common with that fertiliser.

Spurious Guano sent by Mr. Alexander Howden, Marston Court, Pembridge, Herefordshire.

Moisture	...	...	...	...	11.53
*Organic matter, salts of ammonia, and water of combination	...	...	...	...	9.51
†Phosphoric acid	...	...	...	...	13.07
Lime	...	...	...	...	2.96
Oxide of iron and alumina	...	...	...	...	14.84
Alkaline salts	...	...	...	...	48.29
Insoluble siliceous matter (fine clay and sand)	...	...	...	...	100.00

*Containing nitrogen	...	...	...	...	.73
Equal to ammonia	...	...	...	...	.89
†Equal to tribasic phosphate of lime	...	...	...	...	28.53

These analytical results do not require any explanation.

The latest case was brought under my notice by Mr. H. Barneby-Lutley, Brockhampton Court, Worcester:—
Composition of a sample of Adulterated Guano marked "Feathers," sent by Mr. H. Barneby-Lutley, Brockhampton Park, September 23.

Moisture	...	...	...	...	7.27
*Organic matter and salts of ammonia	...	...	...	...	14.31
Phosphate of lime (bone phosphate)	...	...	...	...	5.83
Oxide of iron and alumina	...	...	...	...	6.48
Carbonate and a little sulphate of lime	...	...	...	...	10.98
Alkaline salts	...	...	...	...	4.35
Insoluble siliceous matters (sand)	...	...	...	...	50.86
					100.00

*Containing nitrogen	...	...	...	...	2.34
Equal to ammonia	...	...	...	...	2.84

It will be seen that this so-called guano contained only 54 per cent. of phosphate of lime in round numbers, instead of 23 to 25, the per-centage found in genuine Peruvian guano, and that it yielded not quite 3 per cent. of ammonia, instead of 18 per cent., which is the average per-centage in good guano. Adding together the worthless matters in this feathery compound, for it was nothing else but a mixture of a sandy yellow loam with a little Peruvian guano and plenty of guano bird feathers, we have no less than 75 per cent. of useless materials, and only 25 per cent. of fertilising constituents. On inquiry, I find that the "Feather Manure" was sold as Peruvian Guano at £14 a ton by a Mr. Weekes, of Bromyard, Herefordshire. Its real value cannot be put higher than £2 10s. or £3 at the most.

AUGUSTUS VOLCKEL.

TURNIP GROWING IN SCOTLAND.

The Garioch Turnip Growing Association have held their annual meeting at Inverurie, for the purpose of receiving the report of the Inspectors appointed to examine the different crops. The interest in the competition was this year enhanced by the fact that two silver medals were offered by the Highland and Agricultural Society of Scotland, to be awarded for the best crops of Swedish and Green-topped Yellow Turnips. Mr. Robert Maitland, Balhaggard, gained the medal for the former variety, and the medal for Yellows was won by Mr. William Philip, Lofthillock. The second and third prizes of the Association for Swedish were awarded to Messrs. Philip, Lofthillock, and Tait, Crichtie; and for Green-topped Yellow the second and third prizes fell to Messrs. Tait, Crichtie, and Stephen, Conglass. The following is the report of the Inspectors:—

Inverurie, 4th Dec., 1869.

In submitting the thirteenth report of inspection of turnips to members of "Garioch Turnip Growing Association," the undersigned have pleasure in stating that the crop of this year is much superior to that of last. Prospects at the early part of the season were not encouraging, the months of May and June being unusually cold, followed by great heat and drought in the month of July, and accompanied often by a scorching north-west wind. Land exposed to the sweep of the wind from that direction was under great disadvantages from that of sheltered localities. The rain of the 7th of August fell most opportunely, and from that date the growth was rapid and continuous. Although 1861 and 1866 exceed the average this year for Swedish, and the latter for Green-topped Yellow turnips, it contrasts very favourably with the two last seasons, being 4 tons 19 cwt. above the average of 1868 for Swedish, and 7 tons 3 cwt. 1 qr. for Green-topped Yellow; also 5 tons 0 cwt. 2 qr. and 5 tons 5 cwt. 3 qr. respectively above the average of 1867. For soundness and quality we do not remember a year which presented a better sample. Unless the present severe frost injure the vitality of the root, the prospects for the winter are very encouraging.

We may again call attention to the advantages of early sowing. During the last thirteen years, with few exceptions, Swedish turnips, sown not later than the 15th of May, and Green-topped Yellow previous to the 5th of June, have yielded the heaviest return.

Referring to the suggestion of the inspectors in last report, we beg to embody the report of the Committee appointed for

carrying out experiments with different artificial manures. Trials were made with different manures on three farms occupied by members of the Association. Ten poles of ground were set apart for each trial, divided in four drills of 27 inches broad and 100 yards long, which corresponds to nearly that area, each manure being apportioned to an outlay of 45s. per acre. The experimenters state that the plants of the whole came well forward for thinning, and were hoed on each farm by one individual. Millar's Manure at first took the lead; but after the rain of the 7th of August Langdale Challenge and Peruvian Guano soon presented the best appearance. The two centre drills of each test (viz., 5 poles) were carefully weighed by the Committee, and the following are the results viz.:—

	No. 1.	No. 2.	No. 3.	Average.
	tn.ct. q.lb.	tn.ct. q.lb.	tn.ct. q.lb.	tn.ct. q.lb.
Langdale Challenge	23 16 2	8 21 6	3 12 17	6 0 20
Peruvian Guano	18 4 2	8 15 13	1 20 16	15 2 24
Nitro Phospho.	17 11 0	16 16 8	0 16 12	6 1 41
Miller's Manure	15 13 0	16 15 17	1 20 15	6 2 15
Bone Dust	17 5 0	16 16 13	1 20 11	13 1 20
Somerville's Manure	16 1 2	24 15 2	1 41 3	4 2 8
Burrell's Manure	14 10 1	4 13 16	1 41 5	6 3 12
Richardson Brothers' Manure	14 13 1	20 15 10	2 8 13	6 2 8
Hill & Sons' Manure	14 7 2	24 14 13	2 24 14	0 2 8
J. B. Lawes' Manure	14 19 0	16 13 15	2 24 10	8 3 12
No Manure	—	—	7 8 0	0 —

The Secretary stated that, through the kindness of an unknown donor, an elegant Silver Cup was forwarded to him in April last, to be awarded to the manufacturer of the best artificial manure for turnips. By examination of above statement it will be observed that Mr. Langdale is clearly entitled to the cup. His manure not only stands highest on the average, but in each particular case.

JAMES MILNE.

JOHN TAIT.

JAMES PHILIP.

[Surely there is something suspicious in a prize forwarded by "an unknown donor," who makes his own conditions!—
EDITOR, F. M.]

THE INFLUENCE OF THE MOON ON THE WEATHER.

At the meeting of the Melplaiuh Agricultural Society at Bridport, Mr. John Pope, of Symondsburry, in the chair, Captain EDWARDS said, in the outset, that he was guilty of a piece of imposition in venturing to tell them what the moon had to do with the weather. He would, however, premise that he did not appear before them with any facts of his own, but simply with a series of facts which he had culled from books which he had had the opportunity of getting at. Popular opinion has in all nations and in all ages claimed for the moon a vast number of influences which do not seem to appertain to its mere physical attraction. The vicissitudes of the weather which have been supposed to follow the course of the lunar phases might be imagined, if they could be shown to have any reality, to be produced by atmospheric tides or currents arising from the moon's attraction, like the tides of the ocean. But I shall endeavour to show that there are no grounds whatever, either in theory or observation, for imputing to the moon any such influence, and that, as a matter of fact, there is no such accordance or correspondence whatever between the lunar phases and the changes of the weather. According to popular opinions and traditions the moon is responsible for a vast variety of influences on the organized world. The circulation of the sap in vegetables, the qualities of grain, the goodness of the vintage are severally laid to its account; and timber must be planted, transplanted, and felled, the harvest cut and gathered in, the juice of the grape expressed, and its subsequent treatment regulated at times and under circumstances having determined relations to the aspects of the moon, if excellence be looked for in these products of the soil. According to popular belief the moon also presides over human maladies, and the phenomena of the sick chamber are governed by lunar phases; nay, the marrow of our bones and the very weight of our bodies suffer increase or diminution under its influence. Nor is its influence limited to mere physical or organic effects; it extends its sway into the region of intellectual phenomena, and notoriously governs mental derangement. If such doctrines and opinions were limited to particular nations only prevailed or at particular epochs, they would be less entitled to serious consideration. But it is a curious fact, and one which it is difficult to account for, that many of these doctrines prevail and have prevailed among nations and peoples so distant and unconnected, that it is impossible to imagine the same errors to have had the same origin. At all events, the extent and long continuance of their prevalence entitles them to grave consideration. I propose, therefore, at present to state some of the principal facts and arguments bearing on these points, and shortly examine how far they can be reconciled with the established principles of astronomy and physics. It is believed generally, especially in the neighbourhood of Paris, that in certain months of the year the moon exerts great influence upon the phenomena of vegetation. Gardeners give the name of "Red Moon" to the moon which is full between the middle of April and the close of May. According to them the light of the moon at that season exercises an injurious influence upon the young shoots of plants. They say that when the sky is clear the leaves and buds exposed to the lunar light reddens and are killed as if by frost, at a time when the thermometer exposed to the air stands at many degrees above the freezing point. They say, also, that if a clouded sky intercepts the moon's light it prevents these injurious consequences to the plants, although the circumstances of temperature are the same in both cases. The fact observed by the gardeners and agriculturists is real, subject only to the objection that their observation of it has not been sufficiently extended. Had they seen the effects produced on clear and clouded nights which are not moonlit, they would have discovered the moon's innocence of the offence they charge her with. That these phenomena are wrongly ascribed to the influence of the moon will be easily comprehended by any one who is familiar with the physical principles which govern the radiation and reflection of heat. A clear and unclouded sky, being in fact empty space, cannot reflect back to the earth any of the heat which is radiated by bodies on the earth;

but if the sky be clouded the heat thus radiated will be reflected back to the earth in a greater or less degree. If, therefore, the firmament at night be clear and unclouded, all bodies on the surface of the earth radiating heat towards it, and receiving back no part of that heat by reflection, will lose temperature, will become colder; and this fall of temperature will become greater with bodies which are strong radiators than with those which are feeble radiators. But if the firmament be covered with clouds the heat which all bodies on the surface of the earth radiate will be reflected back to them by the clouds, and, receiving nearly as much as they emit, their temperature will be maintained. The leaves and flowers of plants are always strong radiators of heat, and on a clear and unclouded night they lose temperature continually by this radiation, not receiving at the same time any return by reflection. But if, as has been before explained, the sky be clouded, they will receive as much as they give, and their temperature will not fall. The moon, therefore, has no connection whatever with this effect, and it is certain that plants would suffer under the same circumstances whether the moon is above or below the horizon. An opinion is also entertained that timber should be felled only during the decline of the moon; for if it be cut down during its increase it will not be of good or durable quality. This impression prevails in various countries. But can there be imagined in the whole range of natural science a physical relation more extraordinary and unaccountable than this supposed correspondence between the movement of the sap and the phases of the moon? Certainly theory affords not the slightest countenance to such a supposition; but let us inquire as to the fact, whether it be really the case that the quality of timber depends upon the state of the moon at the time it is felled. M. Duhamel, a celebrated French agriculturist, felled a great many trees of the same age, growing from the same soil, and exposed to the same aspect, and never found any difference in the quality of the timber, when he compared those which were felled in the decline of the moon with those which were felled during its increase; in general they have afforded timber of the same quality. It is maxim among gardeners that cabbages and lettuces which are desired to shoot forth early, flowers which are to be double, trees which are desired to produce early ripe fruit, should be severally sown, planted, and pruned during the increase of the moon; and that, on the contrary, trees which are expected to grow with vigour should be sown, planted, grafted, and pruned during the decrease of the moon. These opinions are altogether erroneous. The increase or decrease of the moon has no appreciable influence on vegetation, and the experiments of several eminent agriculturists have clearly proved this. Pliny states that if we would collect grain for the purpose of immediate sale we should do so at the full of the moon, because during the moon's increase the grain augments remarkably in magnitude; but if we would collect the grain to preserve it we should choose the new moon. So far as it is consistent with observations that more rain falls during the increase of the moon than during its decline, there may be some reason for this maxim; but Pliny can scarcely have credit for grounds so rational, besides which the difference in the quantity of rain which falls during the two periods is so utterly insignificant as to be totally incapable of producing the effects adverted to. It is a prevalent notion in some parts of Europe that the moon's light is attended with the effect of darkening the complexion. That light has an effect upon the colour of material substances is well-known in physics and in the arts. Vegetables and flowers which grow in a situation excluded from the light of the sun are different from those in colour which have been exposed to its influence. The most striking instance, however, of the effect of certain rays of solar light in blackening a light-coloured substance is afforded by chlorides of silver, which is white, but which immediately becomes black when acted upon by the rays near the violet extremity of the spectrum. This substance, however, highly susceptible as it is of having its colour affected by light, is, nevertheless, found not to be changed in any degree when exposed to the

light of the moon, even when that light is condensed by the most powerful burning lenses. It would seem, therefore, that as far as any analogy can be derived from the qualities of this substance, the impression of the influence of the moon's rays in blackening the skin receives no support. Pliny and Plutarch have transmitted it as a maxim that the light of the moon hastens the putrefaction of animal substances, and covers them with moisture; and that if a wounded mule be exposed to the light of the moon during the night the wound will become irritated, and frequently become incurable. The answer to this is, animal substances exposed to a clear sky at night are liable to receive a deposit of dew, which humidity has a tendency to accelerate putrefaction. But this effect will be produced if the sky be clear, whether the moon be above the horizon or not. The moon, therefore, in this case is a witness and not an agent, and we must acquit her of the misdeeds imputed to her. It is a very ancient remark that oysters and other shell-fish become larger during the increase than during the decline of the moon. The fact, however, has been carefully examined by many, who have compared shell-fish taken at all periods of the lunar month, and found that they exhibit no difference of quality. An opinion is prevalent among butchers that the marrow found in the bones of animals varies in quantity according to the phase of the moon in which they are slaughtered. This question has been examined by a series of observations continued for 20 years with a view to test it, and the result was that it was proved completely destitute of foundation. Sanctorious, whose name is celebrated in physics for the invention of the thermometer, held it as a principle that a healthy man gained 2lbs. weight at the beginning of every lunar month, which he lost towards its completion. This opinion appears to be founded on experiments made upon himself, and affords an instance of a fortuitous coincidence hastily generalised. The error would have been corrected if he had continued his observations a sufficient length of time. It is a prevalent opinion that births occur more frequently in the decline of the moon than in her increase. This is also incorrect. Other sexual phenomena, vulgarly supposed to have some relation to the lunar month, have no relation whatever to that period. It is a maxim, handed down by Pliny, that eggs should be put to hatch when the moon is new. In France it is a maxim generally adopted that the fowls are better and more successfully reared when they are hatched at full moon. As these both differ I must leave you to decide which, or if either, is correct. The influence on the phenomena of human maladies imputed to the moon is very ancient. Hippocrates had so strong a faith in the influence of celestial objects, especially the moon, upon animated beings, that he expressly recommends no physician to be trusted who is ignorant of astronomy. Hence in diseases the lunar periods were said to correspond with the succession of the sufferings of the patient. Of these absurd notions there is now no relic except the term *lunacy*, which still designates unsoundness of mind. But even this term may in some degree be said to be banished as a medicinal one, and it has taken refuge in that receptacle of all antiquated absurdities of phraseology—the law—*lunatic* being still the term for the subject who is incapable of managing his own affairs. The eclipses of the moon were long considered injurious to health. In 1693 an unusual number of persons died in Italy at the time of a lunar eclipse, but an epidemic fever which was then raging had, doubtless, more to do with these deaths than the moon. An amusing anecdote is related of a village curate, near Paris, some years after, finding numbers of his flock coming to confession were so great at the approach of an eclipse that he, with a view to ease their minds, and to gain the necessary time to get through his business, seriously assured them that the eclipse was "postponed for a fortnight." (Loud laughter.) Captain Edwards then remarked that they had assembled not simply to hear his lecture but also to have a discussion. As far as his "lights" would allow him he should endeavour to answer any of the arguments that might be advanced in opposition to the opinions he had expressed.

Mr. MILLER stated that as a rule he had more lambs at the time of full moon than at the time of decline.

The CHAIRMAN thought that the answers which Captain Edwards had given to certain questions were perfectly conclusive; his arguments as to the clear night and the foggy night were conclusive beyond all debate. On many

other points, too, the captain had brought before them opinions supported by the best of authorities. So far as his own experience went he concurred in all the answers given to the opinions and maxims introduced. With regard to Mr. Miller he had the same impression as he had—that more lambs and calves were produced just at the full of the moon than were produced at the decline; but he could not support that view by any detailed experience. There were several strange facts worth notice. Some persons, for instance, would not kill a pig at certain seasons of the moon—they said that pork would not then salt. He was very pleased that the subject had been ventilated, and hoped that if any present differed from Captain Edwards they would state their reasons, and then the worthy captain would be kind enough to reply.

Captain EDWARDS said they had all seen the full moon rise, and perhaps some of them had awoken early enough to see the sun rise. They must have noticed the changes in the appearance that had taken place; they must remember that there were many optical illusions, and these being handed down to us we believed that the moon had an effect on different things. He was supported in the view which he took by opinions of high authorities. The moon, he believed, had no more to do with the number of sheep born than he had; nor had it anything to do with lunatics—as to whether they were more raving during a certain stage of the moon than at other times. It might be permitted to tell them he had heard it affirmed by a gentleman that he was a lunatic who believed that the moon had anything to do with these things.

Captain EDWARDS then proceeded taking up the second and main part of his address, the influence of the moon on the weather. The physical laws which govern the phenomena of our atmosphere and regulate the changes of the weather have always been a favourite topic of speculation. The connection of the lunar motions with the tides was apparent, long before the influence by which the moon produced the rise and fall of the waters of the ocean was explained; and this gave countenance, at a very early period, to the idea that that body had an influence on the atmosphere, if not as certain and regular as on the ocean, still sufficiently so to furnish grounds for conjecture as to changes of the weather. Ancient prognostics derived from the moon were in the first instance used as indications of the state of the atmosphere by persons too simple to trouble themselves with the philosophy of cause and effect; but when these appearances came into the hands of philosophers they were at once elevated to the rank of physical causes. Such notions were in keeping which made the moon the boundary between chance and passiveness on the one hand and the active powers of nature on the other. Although from age to age the particular circumstances connected with the moon, by which the atmospheric vicissitudes were prognosticated, were changed, still the faith of mankind in general in her influence on the weather has never been shaken. Many, it is true, may discard predictions which affect to define, from day to day, the state of the weather. There are few, however, who do not look for a change of the weather with the changes of the moon. It is worthy of remark that this persuasion is strongest by those most interested in foreknowing the weather. No navigator, from the captain to the commonest seaman, no agriculturist, from the largest farmer to the field-labourer, ever doubts the influence of new and full moon on fair weather and foul. In a work on gardening I find a chapter on the means of telling the weather, in which the supposed influence of the moon's changes has precedence over the indications of the barometer, the thermometer, and the rain-gauge; the former being characterised by the author as natural, and the latter as artificial data. Why the variations of the atmospheric pressure and temperature should be regarded as less "natural" indications of the weather than the moon the author does not say. In one of the weather almanacs lately in circulation there appeared a table professing to indicate the relation between the changes of the weather and the moon's phases, entitled "Herschel's Weather Table." The general public have fallen into a mistake in supposing that this absurd affair has been sanctioned by the authority of the illustrious astronomer whose name it bears. Whether the table in question is really the production of any person bearing that celebrated name, I cannot say; but you may be assured that neither of the eminent astronomers who have rendered the name of Herschel ever memorable has had any concern in it. As you must all know, panics of different kind have occurred in England. In

1838, the English public were seized with what I shall call a weather panic. There was at that time a rage for weather prognostics, produced apparently by an unusually rigorous and long-continued frost, which took place in the months of January and February. In one of the numerous almanacs which were then circulated, it appeared that the coldest day had been predicted by the author, named Patrick Murphey. So extreme was the public excitement at the moment on this subject that the book was actually purchased, though its price was high, by the hundred thousand. So urgent was the demand for it, that the shop of the publisher was obliged to be protected by the police, who, to keep the thoroughfare unobstructed, marshalled the expectant purchasers in a *queue*, which extended to an incredible length. Yet will it be believed that when this weather almanac was read, with the actual changes of the weather, its pretended predictions were found to fail in 17 cases out of 24! The imputed influence of the moon on the weather may be considered either as a question of theory or a question of fact. Let us consider for a moment the theoretical question. If the moon acts upon our atmosphere by attraction, as she acts upon the waters of the ocean, she will produce atmospheric tides. Thus, as there is high water twice daily, so would there be high air twice daily. The same causes also which at new and full moon produce spring tides, and at the quarters neap tides, would produce spring and neap atmospheric tides at the same epochs. At new and full moon, therefore, the air ought to be higher daily, at noon and midnight, than at any other times during the month, and, on the other hand, at quarters it ought to be lower. The barometer, therefore, should be always highest at new and full moon and lowest at the quarters; and were this the case the weather at new and full moon would be fair, while at the quarters bad weather would generally prevail. But this is not the popular opinion, the traditional maxim being that a change may be looked for at new and full moon; that is, if the weather be previously fair, it will become foul, and, if previously foul, fair. Investigations have been made at the Paris Observatory for twelve years, and it has been found that the effect of the lunar attraction on the barometer at the epochs of the high and low atmospheric tides could not have exceeded the 16-100th part of an inch—a quantity such as could have no conceivable effect on the weather. It is evident, then, that if the moon has any influence on our atmosphere it cannot proceed from any cause analogous to that which produces the tides of the ocean. But let me dismiss the theoretical view of the question and inquire as to the facts. Toaldo gives the result of observations extending at Padua over a period of forty-five years. He was himself an avowed believer in the moon's influence, not merely upon the atmosphere but even on the state of organised matter. In his memoir he has not informed us what atmospheric changes he has taken as changes of weather; and it is fair to presume that the bias of his mind would lead him to class the slightest vicissitudes under this head. But, further, in recording the changes of weather coinciding with the epochs of the phases, he did not confine himself to changes which took place upon the particular day of the phase. On the pretext that time must be allowed for the physical cause to produce its effect, he took the result of several days. At the new and full moon he included in his enumeration all changes which took place two or three days before or two or three days after the day of new or full moon; while for the quarters he included the day preceding and the day following the phases. It appears, then, that by the changes coinciding with a new and full moon recorded by him are understood any changes occurring within the space of from four to six days, while for the quarters those changes which occur within three days. It will not, I presume, require much mathematical sagacity to perceive what the results of such an inquiry would be. These are, as he found them—at every seven new moons the weather changed at six and only settled at one; for every six full moons the weather changed at five and settled at one; for every three epochs at the quarters there were two changes of weather. With such a calculation the only wonder is that the proportion he has found was not more favourable to his hypothesis. A. M. Schubler examined this question with considerable care so recently as 1830. His calculations were founded on observations extending over twenty-eight years. So far as these may be relied on it would follow that there were less changes of the weather on the average the days of the moon's

changes than on any others. A stronger argument against the moon having an influence upon the weather cannot, I think, be adduced than the following: After a cycle of 53 years, the moon being on the same day of each successive year at the same distance from the earth, her influence, so far as depends on distances, will be the same, and will produce the same effect on the weather; thus, if the state of the weather throughout the year 1816 should be examined, it ought to be the same as we are now having, and next year it should correspond with the weather of 1817; but it is well known that no calculations can be made on this data. In conclusion I will mention the absurdity, which you will all remember, of Mr. Saxby's predictions; opposed to him we have the authority of our astronomer royal, who has asserted that the coming weather, as a rule, cannot be predicted with any certainty for more than twenty-four hours. The point, and the only point of importance that remains for discussion, is whether, regarded as a mere matter of fact, any correspondence between the changes of the moon and those of the weather exists, as is popularly supposed. I think that the short examination of recorded facts which I have made proves that it does not.

Mr. LOGGIN's impression had been not that the moon did affect an actual change of the weather, but that whatever was the state of the weather when the moon changed it would continue till there was another change of the moon. Regarding the tides, it was generally believed that the spring and neap tides were affected by the moon. It seemed Captain Edwards thought that if the moon affected the water it would also affect the air.

Captain EDWARDS observed his remark was that if the moon affected the tides the atmosphere would be affected in the same way; if you had high and low tides you would also have high and low air. The truth was that the sun and not the moon affected the atmosphere.

Mr. LOGGIN: How about the change of weather?

Captain EDWARDS: It has nothing to do with the change of the moon, nothing whatever. A certain condition of weather often lasted a great number of days, and if the weather happened to change on the day of the new moon, and lasted for some time, it was put down to the moon, whereas the moon had nothing whatever to do in the matter, and there was no rule regarding it. Prayers were offered in our churches for a change of weather when rain or drought had prevailed much longer than the then state of the moon. If a new moon would bring a change of weather it was unnecessary to offer prayers. He assured them that the moon had nothing to do with it. The weather was influenced by the state of the earth and the sun. The latter it was that principally influenced the weather. It was the sun that caused certain winds to blow at certain times. In the southern latitudes there were the "trade winds," and what caused them? Why the sun and not the moon. If the sun caused the wind to blow in a particular direction was there any doubt that the sun also was the cause of the changes in the weather? He spoke modestly on this matter and with all due respect.

Mr. LOGGIN pointed out that if the moon had no influence on the tides there should be something else to account for the difference in the tides at different places. For an instance, how was it that it was high water at Bridport harbour say at six o'clock, and yet not high water at a place say hundred miles off till nine or ten o'clock? Apparently it ought to be high water at the same time at the different places, if the moon had no influence on the tides.

Captain EDWARDS said a difference of a few hours in the tides say at Bridport and London could be easily accounted for.

A MEMBER: Two-and-a-half hours.

Captain EDWARDS: Oh, it had been already reduced to two-and-a-half hours. Well, that was not difficult to explain. They all knew that London was about fifty miles from the sea; therefore the matter was easily explained. London was a long way up the river; hence the difference in the time of high tides.

Captain SWAIN remarked that there was a difference in the time of high tides at Weymouth and Bridport.

Captain EDWARDS considered this was also explained by the difference in the situation of the places. He said it was the same with the man living on the coast of the English Channel as with the man living in London, who exclaimed regarding the Thames, "What a magnificent river!" and set it down as the largest in the world. So the inhabitants of the coast

towns seemed to fancy they had the open sea, whereas such was not the case. It should be remembered that the channel gradually contracted; hence the difference in the tides.

The CHAIRMAN observed that in the early part of Captain Edwards' address reference was made to the influence of the weather on plants. They were favoured by the presence of one of the most successful gardeners in the county. The vegetables on his table were superior to any he (Mr. Pope) had seen before. He would now ask Mr. Toby to oblige them by expressing his opinion as to the influence of the weather on plants.

Mr. TOBY failed to perceive any analogy between the science of gardening and the influence of the moon on the weather. He could not see that there was any analogy at all. They had met to discuss whether the moon and the weather had anything to do with each other—whether the animals in the field, as Mr. Miller had stated was the case, were better brought forward at full moon than any other time. He knew something about the breeding of animals, which was a very important matter. When sheep had the rain constantly falling on their backs and were in a bad condition there was no chance of getting good lambs to the same extent as when there was fine, clear, dry weather. When moisture was constantly about the body there was an immense amount of evaporation which took away the power of delivery. Indeed, in many cases stimulants were needed before delivery. They all knew that in the wet, close seasons lambing was never so successful as when the atmosphere was bright and clear. Ewes before lambing should be placed under cover, and no ewe should be allowed to lamb at all in the open air.

[Indignant FARMER: Lord have mercy upon thee!]

Mr. TOBY hoped that in wet weather sheep would be taken under cover for lambing purposes. No sensible man cared about exposing his best animals to the inclement weather. Care was taken even of pigs; why not take care of valuable ewes? The speaker remarked on the superiority for breeding purposes of the hilly country of Dorset over the vales of Somerset, which were valuable for grazing.

Captain EDWARDS briefly replied. With regard to the lambing of sheep he had no doubt that more lambs were born after it was dark than by daylight. There could be no doubt of it. The weather, however, had nothing whatever to do with it.

The CHAIRMAN remarked, regarding the weather, that he placed considerable confidence in the barometer; he thought it was the best guide as to the changes of the weather. Respecting the observations of Mr. Toby, he was decidedly opposed to the theory which he had laid down, and could not join issue with him. It was generally admitted by practical men that it was a bad plan to take ewes to lamb into the house. They did not thrive well after. He acknowledged, however, that nothing tended more to lessen the strength of sheep than badly prepared food and a wet back at lambing. Nature was generally sufficient in itself for the requirements of the sheep if they were properly taken care of. It was noticeable that the fattest ewes did not always produce the most healthy lambs. The dry hills of Dorset, for breeding purposes, taking size into account, produced a larger increase of sheep than any other county in the country. The hills were dry and healthy. Somerset was more of a grazing county.

CHIPS.

SECOND SERIES.—CONCERNING MANURES.

(1). *Farmyard Manure*.—What food is to the stock, so is manure to the crops of the farm. Without the one the farmer cannot expect to maintain his cattle in health, or to fatten them for the shambles; without the other he cannot expect to add to the fertility of his soils, and thereby increase the produce of his crops; and, of all the manures at the command of the farm, that of the farmyard is the most valuable, and plays the most important part in the rôle of his cultivating processes. Nor need we wonder at this when we consider the sources of its supply—how it comes to him from the stock he feeds, so that the circle of operation is complete; the crops which feed the cattle, the cattle which give the manure, and the manure which in time gives fertility to the soil which yields the crops; and further, from the fact that this manure contains in itself all the elements of fertility which the plants require. True, that these elements are small in bulk as compared with the bulk of the manure in which they are present; thus, in every ton there is no less than some fourteen hundredweight of water, from four to six hundredweight of solid matter of inferior value, and only from two to half a hundredweight of fertilizing constituents. But we are inclined to think that we too readily take the purely chemical truths which these facts indicate into consideration, and lose sight of what may be a great truth, and which will go to account for the high manurial value which farmyard dung possesses. For, independently of the fact that the manure exercises a most important mechanical influence upon the soil, opening it up most usefully in the case of heavy soils, and even in the case of light ones to the ameliorating influences of the light and air, we are not sure that the large per centage of water which the manure is sure to contain is to be set aside as useless, not reckoning it as part of the fertilizing value of the manure. As water pure and simple it cannot be of value in this respect; but it may be, and we

are inclined to think it is, a very different matter when combined with other constituents. In the absence of positive information as to what the circumstances of the combination really are, conjecture is as sound and is as likely to be as safe on the side of the supposition that the water of combination plays an important part in the manure, as that it does not. The point is one, assuredly, which demands a close investigation, if, indeed, this investigation can ever be properly made when so much is uncertain. In fresh farmyard manure the ammonia is present in a very small proportion, the major part of the nitrogen being present in the state of insoluble, nitrogenous materials; these, however, as the dung increases in rottenness increase in solubility, and the per centage of ammonia is raised. Hence is deduced the recommendation that in order to prevent the escape of the volatile products, the manure should not be exposed to the air, but kept covered up. We have in this journal given plans of covered manure pits, which are, beyond all question, appliances most useful on a farm, and which should have always a place in all farm-buildings. These pits should not only be covered at top, open of course at the sides; but the bottom part, in which the manure lies should be made perfectly water-tight, so that the liquid shall not be suffered to escape and be lost. This liquid will best be preserved in a tank which communicates with the bottom of the pit, and from which, from time to time, it may be pumped up. Some prefer to pump the liquid-manure from the tank on to the heap, allowing it to soak through the mass on its way a second time to the tank.

As this is the season for carting out manure in the stubble-fields, we shall glance very briefly at the way in which this should be left. The point is much disputed as to whether it is best to plough the dung into the soil in the autumn, or to spread it on the surface of the same, allowing it to lie all the winter and be ploughed in at spring-time. We put out of court altogether the practice of

cutting the dung into the fields, placing it in heaps, and then allowing those heaps to lie all the winter, or at least a large portion of it. The practice of spreading the manure on the soil and allowing it to lie all winter, ploughing it in in spring, meets with the approval, not only of practical men (whose opinion is worth listening to, if not of following), but also of high scientific authority. One of our agricultural *savants* who recommends this practice, maintains that, being washed into the soil by the rains, it is much more uniformly distributed than by ploughing it in. Now, before being washed in, it may happen (as in practice, in fact, it does happen) that a long tack of dry weather takes place after the manure will be spread on the surface; and in this case the manure is placed in the very worst position for returning its fertilizing constituents, for the ammonia must be distributed in the air. That it is so, our olfactory sense tells us in crossing a field treated in this way. If we are told to keep our manure in covered pits, in the farm steading, in order to prevent the ammonia from being dissipated in the air, how can we reconcile this with the advice to spread it out upon the surface of our fields, and allow of its exposure for weeks, if not for months, in the action of the air? For our part, we would rather not trust to the matter of fertility present in the dung being washed into the soil. We would then be inclined to allow the general practice of ploughing in the manure to the soil as shortly after it is spread on the surface as possible to be persisted in as the safest. Where manure during the frosty weather of winter months, when the fields are hard-surfaced and the roads good for cartage, is carted on to the field, we would most strongly urge the plan to be followed of making a manure-pit or pits as closely in accordance with these principles we have indicated. We should even advise the farmer to go to some trouble and some expense in preparing a pit for the manure, if not to make a special one. At all events the site of the pit should be carefully rammed close, if not puddled with retentive clay, to prevent the liquid, which is of high manurial value, being allowed to soak away into the soil. To secure this the best way will be to make an excavation of some 18 to 24 inches deep, with sides and ends sloping inwards towards the centre, ramming the soil well up, or, as above stated, puddling it. It will be a good plan to spread a bottom-layer of compost-manure, into which the liquid will soak; this being in spring thoroughly well-mixed with the manure placed above it. The foundation being thus prepared, the manure may be carted to the pit, from the steading, and laid in it in uniform layers. If the heap cannot be finished at once, each time it is left a thin layer of soil should be spread over the whole surface. When the heap is finished, it should be properly shaped ridge fashion, and the surface covered with soil.

CONCERNING STOCK.

Percentage of Flesh-formers in Cattle Foods.—We have given a statement of the per-centage of water, starch, and oil in foods; we now do the same with regard to the flesh-formers, dividing the foods into the classes of, 1st, cereals; 2nd, leguminous seeds; 3rd, straws; 4th, roots; 5th, leaf crops; 6th, grasses; 7th, refuse of the cereals; and 8th, artificial foods. (1) *Cereals*: Wheat 14.6, barley 12.8, oats 17, rye 13.83, Indian corn 12, buckwheat 8.6. (2) *Leguminous Crops*: Beans 24 (taking the form of caseine), peas 23.4, lentils 26. (3) *Straws*: Wheat straw 1.79, oats 1.63, barley 1.68, rye 2.29, beans 6.79, peas 12.55. (4) *Roots*: Swedes 1.443, white turnips 1.143, mangolds 1.64, potatoes 1.4, parsnips 1.21, carrots 0.6, kohlrabi 0.227. (5) *Leaf Crops*: Cabbage 4.75, cauliflower 3.61 (leaves), 8.84 (flowers), mangold leaves 1.76, turnip leaves 2.45, swedes 2.08. (6) *Grasses* (dried state): Red clover 3.60, white

ditto 4.52, yellow 4.48, Alsike ditto 4.82, lucerne 4.40, sainfoin 3.51, vetch 3.56. The above in the natural state as cut: Red clover 18.64, white ditto 28.31, yellow ditto 20.00, Alsike 20.69, lucerne 16.56, sainfoin 15.50, vetch 20.00, sweet-scented meadow or vernal grass (*Anthoxanthum odoratum*) 2.00, crested wagtall grass (*Cynosurus cristatus*) 4.13, cock's-foot (*Dactylis glomerata*) 4.96, rye-grass (*Lolium perenne*) 3.87, Italian rye-grass (*Lolium italicum*) 2.45, grass from water meadow 2.78, meadow hay 10.69. (7) *Refuse of the Cereals*: Bran 13.80, malt-dust and malt-coombs 25.62. (8) *Artificial Foods*: Linseed-cake 29.75, rape-cake 29.53, cottonseed-cake 41.25, linseed-cake (average quality) 28.21, Patent cake 20.66, Company's cake 24.62, ditto 65.87, ditto 46.31, ditto meal 38.44, palm-nut meal 18.01, compound nut-meal 31.81, Cruchley or greaves-meal 24.75.

Treatment of Ailments of Stock.—Commencing our brief notes upon this important department in the care of stock with the calves, we find that the first complaint to which they are subjected is the souring of the milk in their stomachs. This, if not prevented or cured, gets frequently to such a point that a *post mortem* examination will show a mass of curdled milk so hard that it may be cut with a knife. A very eminent breeder and rearer of stock uses, as a preventive means, a dose to the calf as soon as dropped and before it is allowed to suckle the cow, composed of rhubarb, magnesia, and castor-oil—a teaspoonful of each. If the disease or complaint has set, the same medicine with the omission of the castor-oil is given, but twenty grains of the "grey powder" is substituted for the latter, the doses being repeated every six hours. For attacks of the "scour," a complaint to which calves in a more advanced stage are liable, a dose of a quarter-of-an-ounce of nitre, ditto of ginger, and six ounces of Epsom salts will be useful; to this we would recommend the addition of a teaspoonful of sulphur. A gaseous fluid has been found in many instances an admirable remedy for the scour. A third complaint to which calves are liable is the "huak," which is accompanied with a short hacking cough, and generally attacks the animals when about nine months old. The complaint is caused by small worms or parasites attacking the wind-pipe, and, if allowed to go on, ultimately the lungs. Tar applied daily to the nose of the animal in small quantity will be found a cure in the majority of instances. The hoose or "catarrh," to which calves are very liable, often commits great ravages amongst them. As soon as the disease appears attention should be paid at once to the animals, "the first cough heard," says an authority, "should be the signal for the display of unceasing vigilance on the part of the attendant." If at the commencement of the disease remedies are applied, it will soon likely be checked. A very simple remedy in the first stage is a little nitre, given at night in a warm bran mash; two drachms will be enough, and a little sulphur will be an improvement—say a teaspoonful. When these are administered, it is necessary to guard against the animal taking cold, to which it is a little more liable than usual when these are given. Should the cough not yield to this simple treatment, one a little more energetic will be required, as small doses of tartar-emetic and digitalis. Along with medicine careful attention should be paid to maintaining a uniform temperature in the calf-house, and to have this kept thoroughly clean; the food should be of the best quality, and it should be given rather at frequent intervals in small quantities than at longer intervals and in larger quantity. "Experience," says an able authority, "will teach the farmer that these chest affections in cattle often, and speedily, assume a highly inflammatory character, and that they must be conquered at first or not at all."

Of quarter-ill, "black-quarter," or "joint-murrain," an able authority states, inflammatory fever but indicates the nature of the malady. So sudden, he says, are its visitations that the beast in perfect health to-day, may be found drooping and out of sorts to-morrow. The symptoms are too well known to be here given, the prominent ones being great languor, with unsteadiness in the hind-quarters when walking or moving, which the animal has a great dislike to do; the breath is heated, the pulse quick, the muzzle dry, and the disturbed anxious look of the eye shows how uneasy the animal is. When an animal is seen to be attacked, get it, if in the field, housed as soon as possible, and supplied with good litter, in a clean, well-ventilated stall. The animal should then be bled, and a purge—say of Epsom salts—given to it. If a change for the better takes place, the symptoms not increasing, doses of nitre, tartar emetic, and digitalis should be administered twice or thrice a day. If the joints become swelled, hot water fomentations should be at once applied, and afterwards well rubbed, but gently, with a liniment made of camphorated spirits of wine, liquid ammonia, and salt. In the worst stages of the disease ulcers may break out in various parts of the body, but these will be especially in the mouth. No better application to these can be made than sulphurous acid (*not sulphuric acid*): this will at once allay the inflammation, and stop their spreading. One of the most valuable preventives of quarter-ill is good feeding, with carefully-cleaned and well-ventilated housing. Another preventive, highly

praised by eminent men, is the passing of a "seton" through the dewlap of the calf. In feeding, oil-cake should form part of the food, as this substance tends to keep the bowels regular. A dose of nitre, ginger, and sulphur, with Epsom salts, as already named, should also be given to the animals occasionally; this will serve to keep the bowels regular, and it has moreover a remarkably good influence upon the general health of the animal: indeed, of all the medicine used for stock, we are inclined to consider this as the most valuable. As to the use of setons, Mr. Youatt believes them to be of great advantage; they excite inflammation in the neighbourhood of the diseased part, and thus cause a determination of blood, to a greater or less extent, to this new seat of irritation. They are useful in both acute and chronic inflammation of the respiratory organs. For young cattle, rapidly thriving, and placed in pastures perhaps a little too luxuriant, permanent setons are highly beneficial; they act as a salutary drain, and prevent that accumulation of the circulatory fluid which is the usual cause of inflammatory fever and other fatal complaints. The seton is passed through the loose skin of the chest, but not too far down, so as to enable the animal to lie down with ease. The seton is made of twisted cow's tail hair, of the thickness of a finger, and is provided with a button of wood at one end, and a knot at the other, and it should be saturated with turpentine before insertion. The seton should be pulled from one end to the other once every day.

THE CENTRAL FARMERS' CLUB. CONTINENTAL FARMING AND PEASANTRY.

APPENDIX TO THE PAPER READ AT THE FARMERS' CLUB BY MR. JAMES HOWARD, M.P.

The answers to the following questions were given either by letter or *visâ voce*, and are from gentlemen of experience and position. The information received has been much condensed; nevertheless, it is hoped that the facts given may not be without interest.

Question.—*Is the land in your immediate district divided into large and small farms? If so, what is considered a large and what a small farm, and which form the greater proportion?*

Answers:—

Monsieur J. Leclerc, Inspector-General of Agriculture, Belgium.—The following table indicates how rural property is subdivided in Belgium. In the year 1856 there were farms not exceeding—

1½ acres.....	247,551
1½ to 2½ acres	70,413
2½ 12½ "	165,933
12½ 25 "	48,737
25 37½ "	17,432
37½ 50 "	9,153
50 62½ "	5,590
62½ 125 "	9,408
125 250 "	3,329
250 and upwards	1,004

Total number of farms..... 572,550

This total comprises 6,507,590 acres, of which 3,558,632 acres are cultivated directly by the owners, and 2,948,958 acres by tenant-farmers. The following is the mean extent of the farms in the various provinces:

Antwerp	12 acres	Liège.....	11½ acres
Brabant	8½ "	Limburg ...	17 "
W. Flanders.....	9½ "	Luxemburg	28 "
E. do.	6½ "	Namur	18½ "
Hainault	8 "		

Average for the whole country, 11½ acres.

Landed property in Belgium tends to subdivision, This is

the inevitable consequence of legislation which gives to each child the right of claiming one share of the paternal estate, and also is a consequence of the increase of public wealth. Many people who have acquired wealth in business wish to become landed proprietors.

Baron Peers, President of the Agricultural Society of West Flanders, Belgium.—In the two provinces of Flanders property is much divided. There are a few large and many small farms; most of the latter are let without buildings. The majority consist of 1½ to 20 acres; the tillage, &c., being done by the help of cows.

Herr Joest, of the Rhenish Beet-root Sugar Company, Prussia.—Land is much divided; 400 acres is considered a large farm; small farms 27 to 34 acres. Small farms predominate.

Baron Elsnar von Gronow, member of the Royal Prussian Board of Agriculture, Silesia.—Land over the whole of East Prussia is divided into great and small properties. There were in Prussia in 1858 farmed properties under 3 acres 871,922, properties from 3 to 13 acres 521,590, properties from 13 to 180 acres 359,897, from 80 to 360 acres in the country 14,063, from more than 360 acres 14,082. The assessment of landed property in 1865 showed—

5,518 properties of £150 to £300 annual value	
2,600 do. £300 to £450 do.	
1,971 do. £450 to £750 do.	
689 do. £750 to £1,500 do.	
108 do. £1,500 do.	

In 1865 were 291,014 properties in the townships
" 1,503,434 " parishes
" 22,467 " hands of the gentry.

If you take the taxed revenue 30 times, it will represent the real value of the property. The morgen, or Prussian acre, pays in my neighbourhood on land of middle quality about three thalers a year (5s. 5d. per acre).

Dr. Emil Perels, Professor of Agriculture at the University of Halle, Prussia.—Most farms are in the hands of independent owners; hired farms, with the exception of the State domains,

are exceptional. By a large farm is mostly understood one of 600 English acres. The largest estate in my neighbourhood is Saltzünde, with a superficies of 6,000 acres, the smallest (peasant's holding) about 12 English acres. In the Prussian kingdom the peasant holdings preponderate.

Monsieur Edouard Lecouteux, landed proprietor and editor of the *Journal d'Agriculture Pratique*, France.—In the district of Sologne large estates predominate. There are domains of 5,000 acres, but they tend to subdivision. Estates of about 700 acres are the most easily disposed of. The large estates are let in farms of 350 to 500 acres. There are many small holdings of 30 to 50 acres, and others of 2 to 12 acres.

Monsieur Gustave Hamoir, agriculturist, Valenciennes, France.—Landed estates here are very much divided. There are few large proprietors. All are let on lease, and, if large, are often distributed among several tenants. Twenty-five acres is considered a large extent. Ten acres may be considered as the average. A large number are only $1\frac{1}{2}$ acres. It is a rare exception for the landed proprietors to farm their own estates. A great number of farmers have a fourth or more of their land their own property, and hire the rest on lease. There are some farms of 450 to 650 acres; but the mean size of a farm must be considered $3\frac{1}{2}$ acres, and such farms may be considered to predominate.

Monsieur de Pimpin, manager of the farms of La Brèche, the property of Monsieur Cail, near Tours (Loire), France.—Except upon the banks of the Loire, where the plots are very small, landed property is not much subdivided in Touraine; many farms of more than 2,500 acres may be counted; ordinary farms are from 125 to 200 acres; the largest are 4,000 acres in extent, and the smallest 125 acres. The small farms, of which a good many frequently belong to one proprietor, predominate.

Monsieur Maurice Lapointe, farmer, near Metz, France.—Amongst 100 farms in this district there are 30 of from 125 to 200 acres, 70 from 200 to 350 acres, and 10 exceeding 350 acres. The largest farm is from 375 to 400 acres, and the least 50 acres: holdings of a less extent are not considered farms. I consider the mean size 200 to 350 acres.

Monsieur Bovet, agriculturist, Neuchâtel, Switzerland.—Land is much divided. Farms in a ring fence are very rare, except in the mountains, where they are the rule. In Western Switzerland farms of $12\frac{1}{2}$ to 25 acres are considered small, 25 to 75 medium, and 75 to 250 large. Larger than 250 acres are very rare, except in the mountains. The greater proportion of farms are small.

Mr. Whitmore, agricultural engineer, Bologna, Italy.—In this district there are not the large properties or farms as in England, nor the very small ones of Ireland, but instead, medium farms. There are a few large holdings, but not counted as in England, but rather several small farms united. Each farm is of a size to be cultivated by one family of labourers; the number of persons in a family will be about 12. In this district a farm such as is above intended will be about 35 to 50 acres in extent.

From an agriculturist in Austrian Galicia; communicated by Professor Fuchs, Perpetual Secretary of the Imperial Agricultural Society of Austria.—The land in my immediate neighbourhood (district of Cracow) is divided into large farms of 120 to 450 acres, and peasant farms of 3 to 45 acres. In my district the largest farm is 450 acres, and 120 acres the least. Peasant proprietors farm 3 to 45 acres. In my environs farms consist mostly of 300 acres arable and 45 to 75 acres pasture. For each farm of 300 to 375 acres there are in proportion 30 to 40 peasant farms.

From an agriculturist in Austrian Silesia; communicated by Professor Fuchs, Vienna.—Farms are seldom let on hire. They vary in size from 450 to 750 acres. The largest is 1,750 acres, the smallest 120 acres. Farms are generally from 450 to 750 acres in extent.

Herr Nitch, steward of Count Magni's estate of Strassnitz, in Moravia; communicated by Dr. Fuchs, Vienna.—The land is all in large farms. Above 3,000 acres is considered a large farm, and under that extent a small one. The largest farms are 30,000 acres, the smallest 900 acres. In Moravia the larger farms predominate.

Herr Nicholas Fehér, farmer and agricultural engineer, Hungary.—There are hired farms in this country as large as 325,000 acres, and some as small as $7\frac{1}{2}$ acres. There are some landed proprietors who own as much as 600,000 acres,

What is about the average rent of large farms and of small ones, land say of medium quality? If the land in your district is of three qualities, perhaps it may be as easy for you to give the rents of each.

Monsieur J. Leclerc, Belgium.—The average rent of farms in the various provinces in 1856 was:

Antwerp, 24s.	per acre.	Liège, 32s. 4d.	per acre.
Brabant, 32s.		Limburg, 19s. 10d.	
W. Flanders, 26s. 8d.	"	Luxemburg, 14s.	"
E. Flanders, 34s.	"	Namur, 20s. 4d.	"
Hainault, 35s. 2d.	"		

Average rent for the whole country, 26s. 2d. per acre.

Rents have increased considerably during late years in those parts where agricultural industries have been established, chiefly sugar factories. There are in the neighbourhood of Brussels farms which are let at the rate of 58s. per acre. The rents of small farms, for which there is much competition, range generally from 40s. to 48s. per acre.

Baron Peers, Flanders.—For third class land, in large farms, farmers pay 21s., for medium quality 29s., and for the best land 38s. 6d. per acre. Small farms let for 29s., 40s., and 45s. per acre for land of similar quality to the above.

Herr Joest, Cologne.—The average rent is 31s. 6d. per acre, both of large and small farms. The different classes of land are brought almost to one standard.

Baron von Gronow.—The Prussian landowner farms mostly himself, and small landowners do not let farms; only the State and great landholders let land. The greater landholders sometimes let small plots of arable land to the smaller landholders or farmers, or to the labourers. In my own case I let about 360 acres in pieces of $2\frac{1}{2}$ to $7\frac{1}{2}$ acres, at a rent of 25s. per acre for the best quality, and 7s. 6d. for the worst. Land is divided into six classes for taxation purposes.

Dr. Perels, Prussia.—The rents of farms, medium quality of soil, varies much; the extreme limits are from 20s. to 75s. an acre.

In general the small holdings are not let as farms, the owner farms himself. Small lots are let at 30s. to 35s. per acre. The rents may be classified as follows: Soil, first quality 50s., second 35s., third 25s. per acre.

Monsieur Lecouteux.—The rent of large farms is from 4s. 10d. to 8s. per acre, the minimum rent of small farms is 8s. Generally, however, the rent is paid in produce on the "métayer" system.

Monsieur Hamoir, France.—The average rent of land is 72s. per acre. Large and small farmers compete for the land. The very small farmers pay a higher price, because they have to do with small plots, and do not offer so good a guarantee to the proprietor. The difference in the rent of the various classes of land does not bear any analogy to the natural quality of the soil, as high farming based upon root crops has brought all land almost to the same level.

Monsieur de Pimpin, France.—In the north of Touraine the rent of the land is about 3s. 3d. to 4s. an acre, whilst in other districts of the department rent varies from 13s. 9d. to 25s. 6d. an acre. The general rent for small plots of medium quality is 9s. 6d. per acre. First quality land is let at 25s. 6d. per acre, second ditto at 12s. 9d., third ditto at 8s. in the good part of Touraine. In the north, however, the rents are: First quality 6s. 5d. per acre, second ditto 4s. 9d., third ditto 2s. 8d.

Monsieur Maurice Lapointe, France.—First class land lets at 19s. to 22s. 6d. per acre, second ditto 16s. to 19s. 6d., third ditto 13s. to 16s. In this department there are farms let from 33s. to 35s. an acre, and others at 9s. 6d. to 11s. 6d.

Monsieur Bovet, Switzerland.—Good land lets for 40s. an acre, medium 25s. 6d., poor 16s. Pastures are let according to the number of cattle they will carry. The difference between the rent of large and small farms is unappreciable.

Mr. Whitmore, Italy.—The average rent is about 32s. per acre. It is all good land, and varies little in quality.

Dr. Fuchs, Austria.—(From Austrian Galicia).—The average rents of the larger farms in Austrian Galicia, second to third quality soil, is 11s. to 14s. per acre. The rent of small plots of $1\frac{1}{2}$ to 3 acres ranges from 32s. per acre for best quality to 5s. for the poorest. Peasant farms, the property of former serfs, are held by the class, and are not let.

Dr. Fuchs, Austrian Silesia.—Rent varies from 15s. to 60s. per acre.

Dr. Fuchs, Moravia.—21s. 4d. to 25s. 6d. per acre; 19s.

2d. to 22s. 4d. First class 32s. per acre, second class 22s. 4d. to 25s. 6d., third class 16s. to 19s. 2d.

Herr Fehér, Hungary.—Rents range from 2s. 8d. to 8s. per acre. The proximity of the railway has a great deal to do with the value.

At what price can land of medium quality be purchased in large lots? and at what price in small lots?

Monsieur J. Leclerc, Belgium.—Here follow the average selling prices of land in the various provinces in 1856.—

	per acre.		per acre.
	£ s. d.		£ s. d.
Antwerp ...	47 17 6	Liège ...	57 10 8
Brabant ...	68 17 8	Limburg ...	34 18 6
W. Flanders ...	50 19 2	Luxemburg ...	16 13 10
E. do. ...	69 11 8	Namur ...	39 8 6
Hainaut ...	70 14 8	Average for the country ...	50 14 8

On account of the situation, or of particular circumstances, land frequently reaches the value of £112 to £160 per acre.

Baron Peers, Flanders.—Lands of medium quality can be purchased at £56 per acre, that is, in lots of 125 to 150 acres. In small plots of 5 to 15 acres £64 to £72 per acre is realized.

Herr Joest, Prussia.—From £50 to £75 per acre is the price of land in large lots; in small lot £30 to £37 10s. per acre.

Baron von Gronow, Silesia, Prussia.—Land in large lots fetches from £15 to £20 per acre with the farm buildings, &c., and in small lots £25 to £37 10s. per acre without buildings, &c.

Dr. Perels, Prussia.—The selling price of land varies considerably according to locality. It ranges from £37 10s. to £75 per acre.

Monsieur Leconteux, France.—Land in large lots is sold at 64s. to £3 per acre.

Monsieur Hamoir, France.—Large lots £96 per acre, and in small £144 per acre. When there has been a succession of good crops for several years, and the farmer has saved money, the price of small lots is considerably augmented, because the ordinary farmer does not and will not appreciate any other investment than land, and buys therefore at any price when there is a possibility of doing so. I have known land sold at £192 per acre.

Monsieur de Pimpin, France.—The price of land varies from £8 to £20 per acre, according to the quality of the soil and the position of the property. £28 per acre is realized for small plots. When higher prices than these are paid it is owing to special circumstances.

Monsieur Lapointe, France.—Large plots £20 to £40 per acre; small ones £24 to £48. Some farms sell for as much as £192 to £160 per acre.

Monsieur Bovet, Switzerland.—In large farms £24 to £32 per acre including the farm buildings. Mountain and forest-land £3 6s. to £5. Small farms sell for £48 to £56 per acre. Vineyards fetch from £300 to £320 per acre.

Mr. Whitmore, Italy.—Large farms can be bought at about £20 per acre, and small one at about £32 10s.

Dr. Fuchs, Austrian Galicia.—Large farms of medium quality can be bought at £7 to £8 per acre.

Dr. Fuchs, Austrian Silesia.—In large plots from £20 to £25 per acre. In small plots from £25 to £30 per acre.

Dr. Fuchs, Moravia.—Large plots 25 6s. 8d. to £13 6s. 8d. per acre; small plots £8 to £16 per acre.

Herr Fehér, Hungary.—Large estates sell from 53s. 4d. to 93s. 4d. per acre, according to their position. Small farms 54s. 4d. to £20 per acre, according to situation.

Are the small farms in your district the property of the occupiers, or do they rent them? What is your opinion upon the question of peasant or small farmers? Is it better for their own interests and those of the country that they should be the owners or simply the tenants of the soil?

Monsieur Leclerc, Belgium.—The number of small farms let to tenants or farmed by their proprietors is about equal. In my opinion it would be better for both small and large farms to be worked by the proprietors.

Baron Peers, Flanders, Belgium.—Both small and large far-

mers are generally tenants, few are proprietors of the land they occupy. There is nothing worse for the small as for the large farmer than to be proprietor of his farm. When he buys he has almost always to borrow a part of the purchase money to pay a heavy interest, and has to be careful in payment. At his death, if there are many children, they sell. The expenses come to from 15 to 18 per cent.; in a word, those who are well advised invest their money, and the greatest number do this. In this manner they have their money when they want it, and can meet all eventualities. However, our farmers are not always ready to buy. They often enter upon a farm of from 100 to 125 acres, with a capital of £40, whilst they ought to have £80 to £100. It is only by dint of economy and privations that they get round, and this at the end of 30 or 40 years.

Herr Joest, Prussia.—Farms are mostly the property of the farmers. Prosperous farmers are to be preferred to poor proprietors, but many owners are said to produce a rich country.

Baron Elmer von Gronow, Silesia, Prussia.—I think you get a more steady population if every one owns the land he farms. In eastern Prussia there exists no class of persons who would farm a very small property, so I had never occasion to compare the results. For the State and the great landowners it is better to let the farms out to farmers with intelligence and capital, but a man of intelligence could not subsist on a smaller farm of middle quality than 130 to 200 acres.

Dr. Perels, Prussia.—The small estates are as a rule the property of the farmer; it is an exceptional case when they are hired. As a general rule, it is considered in this country more advantageous when the farmer owns his land. An independent peasant proprietor is to be preferred to a tenant farmer.

Monsieur Leconteux, France.—The small farms are worked by farmers or "métayers." The position of proprietors is the best in the world for the peasant, but on the condition, however, that he has sufficient money to work his land. Generally the peasants are possessed by the *démou* of property, they buy too much land, and have no capital to work it with.

Monsieur Hamoir, France.—Very few of the small farms are completely the property of the occupier; it is quite the exception. It were certainly preferable that the small farmer should not be a proprietor or landowner at the price he pays. The interest of his money invested in ordinary securities would permit him to hire, even at a high rate, double the quantity of land that he could hold as an owner, but he does not enter upon this path, because of his ignorance and fear of investing money, and for another fear at least as serious, that of the short duration of leases, at the end of which he dreads to be ousted for some competitor.

Monsieur de Pimpin, France.—As a rule small farms are not the property of occupiers; they are hired for a money rent. This system of letting equally prevails in the north of Touraine, where the proprietor gets from 3s. 2d. to 4s. an acre; in the south, contrariwise, "métayage" prevails. The system of letting land for money in the north of Touraine is bad in this sense, that the farmers for the most part are destitute of the requisite knowledge, nor have they capital enough to work the land they rent. In order to live they have to work upon the feelings of the landlord by inducing him to take a low rent whilst they exhaust his soil, for they never manure it; the result is a state of non-progressive agriculture, and these farmers are constantly complaining. To insure progress where neither the rent nor the selling price of the land is high, there must be either farmers possessing both money and intelligence, knowing their business in fact, or else the landlords must farm themselves.

Monsieur Lapointe, France.—The small farmers though not numerous are in easy circumstances. The owners of small farms who wish to cultivate themselves, when they have money, often let their own land and cultivate a larger quantity, which they hire on lease. I think for the most part they would find it to their advantage to employ their capital in the cultivation of a less extent of land.

Monsieur Bovet, Switzerland.—They are generally farmed by the owners. We think it is better they should be owners; it is a great guarantee for the fixity of social order. For high farming it is a different matter, though for the last few years the example of the large proprietors and neighbouring farmers has exerted a salutary influence. The class of farmers

in this country are, as regards the majority, men belonging to the class of small proprietors.

Mr. Whitmore, Italy.—They are nearly all let out to the labourer on the "métayer system," the proprietors residing in the adjacent towns. The general opinion in this country is, that so far as the labourers or their families are concerned, the "métayer" is the best system.

Dr. Fuchs, Galicia.—The small farms are the properties of the peasants. The farming of the peasants is in a very poor state. There is no industrial manufacture in this district, consequently there is no capital; if there were capital the farming would be better, and it would also be to their advantage under such circumstances to be owners of their land.

Dr. Fuchs, Moravia.—Small farms are the property of the occupier. I think it would be better if they were tenants.

Herr Fehér, Hungary.—Scarcely one-tenth of the land is let on hire. The land is the property of the occupier. I think it is every way better for the peasant or small farmer to cultivate his own land rather than that of another.

Is land let by the year or upon lease for a number of years; if upon lease, for what term of years? Are the leases verbal or in writing, and is it usual for them to contain covenants or stipulations binding the tenant against overcropping the land or cropping it in a particular way?

Monsieur Leclerc, Belgium.—The land is always let on lease. The duration of the leases is generally nine years, with the option of withdrawal at the end of three and six years; but some intelligent land owners are beginning to understand that it is to their interest to give longer leases, and there are already some of 12 years. Agricultural societies aim at this amelioration. In some parts of the country the outgoing tenant has a claim to an indemnity on the part of the incoming tenant for manure in the land and the improvements he may have made; this is an excellent system, and gives much security to the farmer. Agricultural societies endeavour, also, to make this custom the general one. Leases are always made in writing, and they often contain restrictions. These last, however, are disappearing as the leases become longer, and as the principle of paying the outgoing tenant is adopted.

Baron Peers, Flanders, Belgium.—All the land is let on lease; the general term is 9 years; some for 12, 15, and 18 years, but these are the exception. There are few verbal leases, almost all are written. Frequently they are made out by a notary. Nearly all are private agreements. All contain rigorous stipulations of annulling, or heavy penalties when the farmer exceeds his powers. He ought to cultivate like a good father of the family, put on manure, lime, and plough and hoe properly. The last year of his lease he must not, in a farm of 125 acres, grow more than 5 acres of buck-wheat, 5 acres of oats, and other exhaustive crops. At the end of his last harvest, he receives, according to estimates, from the incoming tenant, the price of the farm-yard manure and former dressings; even for the liquid manure he receives a value. The farmer is charged with the repairs of the hired buildings, painting, &c.

Herr Joest, Prussia.—Land is let on leases for 3 and 6 years; but as a rule leases are for 9 years—some are for 12 years. They are written contracts drawn up by a notary. The farmer must manure his land according to local custom. In the last year of his lease, he is restricted as to the extent of cropping.

Baron von Gronow, Prussia.—Small parcels are let out from 1 year to 3 years; but farms, properly so called, with home-steads, are let upon a lease of 12 or 18 years. No one would take a farm with less than a twelve years' lease. The contracts are in writing. The farmer is precluded, *by law*, from selling straw or meadow hay; most contracts forbid him to sell such feeding stuff as clover, mangold, &c. The rotation of crops is very seldom mentioned.

Dr. Perels, Prussia.—As a rule the state domains are let on 12 year leases, short leases are the exception. Leases are always in writing, there are limiting conditions, particularly as regards selling straw; which, for instance, on the state domains is prohibited—furthermore, conditions are made that a restorative rotation of crops shall be observed, and that the land shall be kept in a fertile state.

Monsieur Lecouteux, France.—Leases are from 3, 6, and 9 years. The *métayer* is by the year. There are few written

and registered leases. The stipulation is by word of mouth or private unstamped agreements. No covenants are given for maintaining the fertility of the soil.

Monsieur Gustave Hamoir, France.—Leases are generally and almost entirely for 9 years. The leases are generally made out by deeds before a notary; each proprietor adds some particular clauses of little importance. The rotation of crops is no longer stipulated for, except indeed for the last 2 years. What is most generally required is a thorough manuring 3 years before the expiration of the lease.

Monsieur de Pimpin, France.—Land is let in the north of Touraine, on leases of 3, 6, and 9 years. The rent days being the 24th of June or the 1st of November of each year. In the south the leases are for half the crops. Leases are stamped and sealed, they contain many stipulations prohibiting the farmer from exhausting the soil, and which often oblige him to manure it; but these agreements are seldom or never observed. The landlord is tolerant, and the lease runs its course without any improvements taking place.

Monsieur Lapointe, France.—On leases of 9, 12, and 18 years. Leases are always in writing, and generally contain a prohibition against selling off green food or fodder, roots, &c.

Monsieur Bovet, Switzerland.—Generally on leases the term 3, 6, and 9 years, with a right of continuity if there should not have been a twelve-month's notice given. Leases are in writing throughout almost all Switzerland. In western Switzerland a stipulation is made, that no more than three white crops shall follow together, and no more than two of the same kind. Also, the extent of cereals, root-crops, and industrial crops that may be grown is sometimes specified—generally, a third of the total area.

Mr. Whitmore, Italy.—The length of contracts is 9 years; but sometimes, as short as three years. The general opinion is that it would be better if leases were of longer duration. Leases are in writing, some even are printed and explain all that the farmer has to observe, not only for the rotation of crops, but the manner in which the work is to be done; and also, as to the management of the beasts or cattle.

Dr. Fuchs, Galicia.—The lease of large and small plots of land is from 3 to 6 years. They are in writing and contain reciprocal conditions. The tenant is not allowed to sell straw from the same but must make it into manure. Rotation of crops is not specified; but for small plots of land no conditions whatever are named.

Dr. Fuchs, Austrian Silesia.—Leases are for 4 years. For large estates 25 year leases are frequently given, for medium sized farms 10 year leases are generally given. Leases from 1 to 4 years are only verbal, longer leases are in writing and the tenant is constrained to keep the land in good order.

Dr. Fuchs, Moravia.—On leases of 12 to 21 years. In writing. Exhaustion of land is prevented by the covenant that on every 4½ to 6 acres one head of grazing cattle must be kept, and the dung produced must only be used on the farm and cannot be sold.

Herr Fehér, Hungary.—Land is let on lease mostly for 6 years, some for 9 and 12 years; sometimes for longer periods. Contracts are in writing, the stipulations are exact with respect to the system of cultivation.

Have you game laws in force, and, if so, does the landlord reserve to himself the right of sporting?

Monsieur Leclerc, Belgium.—There is a very stringent game law in Belgium; the result is, so much game is often preserved, that farmers have frequently to complain of its ravages. The right of shooting is always reserved by the landowner, if not for his own pleasure, for letting to others. About 3s. per acre is paid for the right of sporting.

Baron Peers, Belgium.—Our game laws are severe; without a licence, which costs 26s., it is not permitted to shoot even on one's own estate. The proprietor reserves the right of shooting in the lease.

Herr Joest, Prussia.—We have no game laws; but the proprietors reserve to themselves the right of shooting.

Baron Gronow, Prussia.—Yes; but the law gives also some security against damage done by game, going so far as allowing the tenant to kill it, if the proprietor does not keep it in bounds. Nearly always the proprietor retains the right over the game.

Dr. Perels, Prussia.—Game laws exist; but from time to time there is agitation for their repeal or alteration. The

proprietor has not the right of shooting, except he has 180 acres of land.

Monsieur Lecouteux, France.—The law protects the game—too much so. The landlord reserves the right of shooting.

Monsieur Gustave Hamoir, France.—We have a game law; I herewith send you a copy. On account of the great subdivision of the land, the owner has little interest in reserving the right of shooting; he only does so when he possesses a large amount of land in his parish. As a rule, the right is given to the farmer, who is in a position to prohibit the entry to his field to anyone who might cause damage.

Monsieur de Pimpin, France.—We have laws which regulate the beginning and close of shooting, so as to prevent the total destruction of game. As a rule, the landlord reserves the right of shooting.

Monsieur Lapointe, France.—The game law of France is dated May 3, 1844. The landlord generally reserves the right of shooting by a clause in the lease.

Monsieur Bovet, Switzerland.—In nearly every canton there exists a game law. The shooting season begins September 1st, and ends December 31st. There are, however, some exceptions, as there are open times between the latter date and the end of February.

Mr. Whitmore, Italy.—In the sense understood in England, there is no game law here. There has lately been one passed prohibiting the destruction of birds during the hatching season, and no man can shoot on the land of another without leave.

Dr. Fuchs, Galicia.—There are laws for the preservation of game. When there is any quantity of game, it is generally let with the land.

Dr. Fuchs, Austrian Silesia.—There are laws; but they are not enforced. Tenants of large plots are bound to keep poachers off their land.

Dr. Fuchs, Moravia.—Unfortunately none. A farm of more than 300 acres entitles to the right of sporting; otherwise it is let in districts to the highest bidder.

Herr Fehér, Hungary.—We have game laws; and the right of sporting is reserved by the proprietor.

What are the crops usually grown, and in what rotation? and what is considered a good average yield?

Monsieur Leclerc, Belgium.—Cereals: Wheat, rye, barley, oats, buckwheat; Roots: Turnips, carrots, beetroot, and potatoes; Plants used in industry: Colza, rape, flax, sugar-beet, hemp, hops, chicory, tobacco; Vegetables: Vetches, beans, horse-beans; Fodder. The rotation of crops is triennial or quadrennial.

Wheat	...	...	22 bushels per acre.
Rye	...	...	23 " "
Barley	...	...	38½ " "
Oats	...	...	37½ " "
Colza	...	...	26 " "
Flax	...	(of grain)	10½ " "
Do.	...	(fibre)	14½ cwt.
Beetroot	...	...	17 tons "
Beans	...	...	28½ bushels "

Baron Peers, Belgium.—Our harvests in the sandy districts are: Wheat, rye, oats, potatoes, buck-wheat, haricot beans, white turnips. On fallows or upon very ordinary land, spergula is cultivated, cut green. The rotation of crops is as follows: Wheat (when the land is suitable), rye, oats (without clover), flax, potatoes, beetroot, or carrots. Upon manured oat land, clover; upon manured rye, an alternate crop of turnips. A full crop is considered:—

Of Wheat	...	...	26½ bushels per acre.
" Rye	...	...	27½ " "
" Oats	...	...	38½ " "
" Buckwheat	...	...	26½ " "
" Peas	...	...	23 " "
" Colza or Rape	...	...	22 " "
" Beetroot	...	...	16 tons "
" Potatoes	...	...	12½ cwt.
" White Potatoes*	...	...	36 " "
" Do.†...	...	...	28 " "
" Flax (in fibre)	...	...	4½ " "

* On fallow. † As an alternate crop after rye.

Herr Joest, Prussia.—Rape (highly manured), wheat, rye (slightly manured), clover, oats; or, wheat (manured), sugar-beets (without manure), rye, clover, oats.

Wheat	...	...	35 bushels per acre.
Rye	...	...	33 " "
Oats	...	...	46 " "
Rape	...	...	45 " "
Beetroot	...	...	about 12½ tons "

Baron Gronow, Prussia.—Rye, wheat, barley, oats, pulse, red clover, white clover, lucerne, Esparsette, cow-grass, Swedish clover (*trifolium hybridum*), rye-grass, Timothy grass, and other grasses, Indian corn (for feeding geese), rape-seed, flax, potatoes, mangolds, lupins. The rotation is very different, but nearly a four years' course:—

1. Potatoes or Mangolds.	3. Clover.
2. Barley or Oats.	4. Rye or Wheat.
Rye	27 bushels per acre.
Wheat	23½ " "
Barley	33½ " "
Oats	36 " "
Potatoes	7½ tons "
Mangolds	11½ " "

Dr. Perels, Prussia.—In my district, wheat, rye, oats, barley, peas, potatoes, roots for fodder, sugar-beet, clover, lucerne, are grown. A strictly-observed rotation of crops does not exist, but it is the usual practice to observe a change between green and white crops. A good yield may be considered:—

Wheat	...	...	45 to 60 bushels per acre.
Rye	...	...	35 45 " "
Barley	...	...	50 60 " "
Oats	...	...	50 120 " "
Peas	...	...	— 30 " "
Potatoes	...	...	— 8 tons "
Turnips	...	...	12½ 25 " "

Monsieur Lecouteux, France.—Cereals; fodder of all kinds; meadow-grass. Little wheat, which yields from 14½ to 18 bushels per acre, but, in carefully cultivated fields from 22 to 27 bushels per acre. Much rye, yielding from 18 to 24 bushels per acre. Fodder yields from 32 to 40 cwt. per acre.

Monsieur Gustave Hamoir, France.—

Beetroot	.....	or	.....	Beetroot
Wheat				Wheat
Clover				Oats
Wheat				Clover
Oats				Beetroot
Beetroot				

Large farmers have no rotation of crops. Many have one-third to one-fourth of their land in beetroot; the largest farmers, one half and more in roots.

Per acre.

Beetroot	.....	18 tons.
Wheat	.....	31 bushels grain
Oats	.....	60 " "
Clover	.....	1st cut, 2 tons
	.....	2nd cut, 1 ton.

Monsieur de Pimpin, France.—Corn, rye, root-crops, oats, and artificial grasses. The *petite culture* follows a five-course shift in the south of the department: 1st year, corn; 2nd, clover; 3rd, pasture; 4th, fallow or root crops; and 5th year, small grain. In all the north there is no regular rotation of crops; but, mostly, cultivation is conducted on a three-course system: 1st year, rye or wheat; 2nd year, oats; 3rd year, fallow. High farming follows the three-course system: 1st year, root crops; 2nd year, corn; 3rd year, artificial grasses. The yield on small farms, where little manure is used, is of corn, say 10 to 12 bushels per acre. In good farms the yield is 30 to 36 bushels per acre of corn, and 12 to 16 tons per acre of beet-root.

Monsieur Lapointe, France.—Ordinary rotation: 1st year, fallow, clover, potatoes, beetroot, peas, lentils, vetches or beans; 2nd year, wheat; 3rd year, oats, barley, rye. Out of the rotation we cultivate lucerne and rape, also the vine. The mean yield is:—

Wheat	...	...	18 bushels per acre.
Oats	...	...	24 " "
Barley	...	...	22 " "
Rape	...	...	6 " "
Wine	...	...	168 gallons "
Potatoes	...	...	4 tons "
Beetroot	...	...	6 " "

Monsieur Bovet, Switzerland.—Very few fixed rotations. In Western Switzerland, wheat, oats, rye, barley, roots, rape or colza, a little tobacco, sainfoin, clover, lucerne, &c. *German Switzerland*: Coarse wheat, wheat, rye, oats, potatoes, clover, many fruit-trees. Wheat, 30 to 34 bushels per acre, maximum 43 bushels ditto; oats, 36 to 42 bushels per acre, maximum 54 bushels ditto. On the table-land of Western Switzerland in proportion to the seed, wheat 6 to 10 to 1, and oats 8 to 15 and even 20 to 1. Potatoes give 144 bushels per acre, carrots 240 ditto, beetroot 480 ditto. Natural meadows 16 cwt. to 1 ton per acre; considerably more in central Switzerland; artificial meadows 24 to 36 cwt. per acre; on the mountains 8 cwt. per acre; the most in the Jura.

Mr. Whitmore, Italy.—The principal products are: Hemp, wheat, Indian corn, and green crops. The rotations are, in lands good enough for growing hemp: Wheat after hemp; and on the lands not good enough for hemp: Indian corn, after wheat, and sometimes trefoil, wheat, and hemp.

Wheat	yields about	.....	14 bushels per acre.
Indian corn	"	.....	21½ "
Hemp	"	.....	10½ cwt. "

Dr. Fuchs, Galicia.—Wheat, rye, barley, oats, rape, potatoes, and carrots. The potatoes and carrots are not grown upon the small farms. The usual rotation is: 1st, green crop, manured with 3 cwt. of artificial manure per acre; 2nd, rape; 3rd, wheat; 4th, clover; 5th, rye, with 1½ cwt. of artificial manure, or 3 cwt. of bone-meal; 6th, oats. Another rotation is: 1st, roots manured; 2nd, barley; 3rd, clover; 4th, wheat; 5th, rye, with 3 cwt. of human manure or bones; 6th, oats.

Dr. Fuchs, Austrian Silesia.—The crops grown are potatoes, mangold, barley, wheat, rye, clover, oats, flax, and a little rape. The rotation of crops on small farms which will not grow clover is: 1st, potatoes; 2nd, rye; 3rd, oats; 4th, pasture. When the land will bear clover the rotation is mostly: 1st, potatoes; 2nd, barley; 3rd, clover; 4th, wheat or rye; 5th, oats. The yield is as follows: Mangold 10 tons per acre, potatoes 5 ditto; wheat 20 bushels per acre, rye 20 ditto, barley 35 ditto; oats 30 to 40 ditto; clover-hay 30 cwt. to 2 tons per acre; meadow-hay 15 cwt. to 17 cwt. per acre. The irrigated meadows give a great deal of grass, but of bad quality; flax, 1 ton of fibre; rape, seldom more than 12 to 15 bushels per acre, on account of the cockchafer. Pease grown between rows of potatoes give 2 to 3 bushels per acre.

Dr. Fuchs, Moravia.—Wheat, rye, barley, oats, millet, maize, apeseed, potatoes, mangold, and sugar-beet, white and red clover, lucerne, "Espanzette," hops, caraway-seed, carrots, &c. Wheat 15 to 18 bushels per acre, rye 15 to 18 ditto, barley 30 ditto, oats 30 ditto, millet 18 ditto, maize 40 ditto, rape-seed 20 ditto; potatoes 4 tons per acre, mangolds 13½ ditto, sugar-beet 10 ditto, carrots 10 ditto; caraway-seed 12½ cwt., hops 4½ ditto.

Herr Fehér, Hungary.—Crops generally grown: Wheat, barley, rye, oats, Indian corn, rape, millet. 1st year, wheat, rye, or rape; 2nd, barley, oats, or Indian corn; 3rd, fallow or fodder (green). The average crop is:—

Wheat	...	...	12 to 18 bushels per acre.
Rye...	...	...	14 " 18 "
Barley	...	...	13 " 15 "
Oats	...	...	15 " 20 "
Indian corn...	...	...	12 " 20 "
Rape	...	...	8 " 20 "

Is guano, bone, or other artificial manure much used? If so, for what crops? and what quantity is applied?

Monsieur Leclerc, Belgium.—We use in Belgium guano, animal charcoal, superphosphate of lime, crushed bones, turf ashes, powdered oilcake, rape, and woollen refuse, lime, marl, fecal matter, and town mud.

Baron Peers, Flanders, Belgium.—Much guano is used, particularly on the light lands. It is the custom to use it at the rate of two cwts. per acre.

Herr Joest, Prussia.—Guano for rye, 3 cwts. per acre.

Baron Gronow, Prussia.—Bones, superphosphate of bones, or "Baker guano." Nitrate of soda, sulphate of potash, sulphate of magnesia, and gypsum are much in use. The use of guano has decreased. The bones and most of the other artificial manures are used for rye, wheat, potatoes, and

mangold, gypsum for clover, sainfoin, and lucerne; sulphate of potash on very light or moory land (1½ to 3 cwts. per acre.)

Dr. Perels, Prussia.—Artificial manures are much used, mostly for early crops, and indeed in quantities of 5 cwts. per acre; chiefly are used, Peruvian guano, superphosphates made from Baker Island guano and ground bone, ammoniacal superphosphates, dissolved bones, pure bone meal, Chilian saltpetre, and alkaline salts.

Monsieur Lecouteux, France.—Guano 1½ cwts. per acre, fossil phosphates 4 cwts. per acre, animal charcoal 10 bushels per acre, sulphate of ammonia 1½ cwts. per acre, superphosphate 1½ cwts. per acre.

Monsieur Hamoir, France.—Artificial manure is beginning to become popular. Some use guano at the rate of 3½ cwts. per acre, besides 16 tons per acre of farmyard manure. Others apply 9½ cwts. per acre of rape or colza cake, 1½ cwt. per acre of guano, besides the farmyard manure. Oilcake is the manure most used. Guano is becoming less esteemed, because it gives bad sugar beet-root. I have established a manufactory of artificial manure suitable for different plants and soils, which has increased considerably, and excites competition.

Monsieur de Pimpin, France.—In "petite culture" no artificial manures are used; but, on large estates farmed by their owners, from 2½ to 3 cwts. per acre of Peruvian guano is used.

Monsieur Lapointe, France.—The only artificial manure employed is gypsum, for clover, lucerne, and vetches, about 7 bushels an acre.

Monsieur Bovet, Switzerland.—Very little guano; a little pulverised bones, about 9 cwts. per acre generally. Several progressive farmers are now engaged in making comparative trials thereon, also the Alpine Societies for the mountain districts. In the Jura marl is used as manure.

Mr. Whitmore, Italy.—They are beginning now to use bones and other artificial manures, but for the hemp lands it has long been the practice to employ crushed linseed cake at the rate of about 12 cwts. per acre, costing about £4 16s. per acre.

Dr. Fuchs, Galicia.—Guano is rarely used with us; it is too dear. We mostly use human manure in powder, at 8½ cwts. per acre, or bone meal at 5½ cwts. per acre.

Dr. Fuchs, Austrian Silesia.—Guano is never used; lime and gypsum are used.

Dr. Fuchs, Moravia.—Crushed bones, wood ashes, and lime for straw and root crops.

Herr Fehér, Hungary.—Very seldom. It depends whether there is much stable manure or not.

What is the usual depth of cultivation for root crops, and what for cereals?

Monsieur Leclerc, Belgium.—Depth for cereals, 6 to 7 inches; roots, 8 to 9 inches. Deep ploughing is not generally practised. On the small farms the land is sometimes dug to a depth of 8 or 10 inches.

Baron Peers, Flanders.—The usual depth for cereals is from 4 to 5 inches; for roots, 8 to 10 inches.

Herr Joest, Prussia.—For beet-root 13 inches, and for cereals 10 inches.

Baron Elsner von Gronow, Silesia.—The land is cultivated from 9 to 12 inches deep.

Dr. Perels, Prussia.—The average depth of ploughing for cereals is 7 inches, and for turnips and potatoes 12 inches.

Monsieur Lecouteux, France.—6 inches is the general depth of cultivation of the country; 10 inches deep is attained in good cultivation.

Monsieur Gustave Hamoir, France.—In ploughing for roots 10 inches is the ordinary depth; the large farmers who have plenty of power turn up the soil 12 to 14 inches, and often 16 inches deep. The depth of ploughing for cereals is 7 to 8 inches.

Monsieur de Pimpin, France.—A great deal of land is ploughed only 2 to 4 inches deep. On well managed farms the depth of cultivation is 8 to 10 inches deep.

Monsieur Lapointe, France.—The depth of cultivation varies from 4½ to 6 inches.

Monsieur Bovet, Switzerland.—6 to 8 inches deep for cereals; for roots up to 12 inches deep. The introduction of new ploughs has increased the mean depth from 4 to 6 inches.

Mr. Whitmore, Italy.—The medium depth for cereals is

18 inches; for the hemp crop even deeper culture is resorted to. Roots are not grown.

Dr. Fuchs, Galicia.—The usual depth for white crops 6 to 7 inches, and for roots 8 to 9 inches. A subsoil plough is seldom used.

Dr. Fuchs, Austrian Silesia.—On large estates the depth is 7 inches in the spring and 9 inches in the autumn.

Dr. Fuchs, Moravia.—For roots, 16 inches deep; for corn, 6 inches deep.

Herr Fehér, Hungary.—For roots 7 to 10 inches, and for cereals 4 to 6 inches deep.

What wages are paid to the farm labourers in the winter months, and what in the summer? Say how much in money and how much in rations. What extra wages (if any) are paid during the harvest months, either in money or in rations?

Monsieur Leclerc, Belgium.—The average wages of farm labourers are 1s. 1d. per day without food, and 7½d. with food. The maximum wage without food is 1s. 6d. for men and 11d. for women; the minimum is 9d. for men and 6d. for women. With food the maximum wage is 11d. for men and 6d. for women; the minimum is 5d. for men and 3d. for women. Workpeople engaged by the year do not receive anything extra at harvest-time, but day labourers are paid 2s. 6d. to 3s. 2d. per day at this season. In many parts the harvest is gathered by men working by the piece, who earn from 4s. to 4s. 9d. per day. In the cultivation of the soil of Belgium it is computed that the labour amounts to 27,600,000 men's working days, and 14,660,000 women's working days.

Herr Joest, Prussia.—Wages are 1s. 2d. to 1s. 6d. per day in summer, and 1s. to 1s. 3d. in winter—all paid in money. 3½d. to 6d. per day extra is paid in harvest. Many women are employed who receive about 1s. per day. No farm-work is done by the piece.

Baron Elaner von Gronow, Prussia.—Wages are 4d. a day in winter, 5d. in spring and autumn, 7½d. to 10d. in harvest, without victuals. In harvest a little corn brandy is given. Unmarried women and widows are extensively employed; their wages are about 1d. less than the labourer. In harvest-time they are paid 5d. to 6d. per day. As much work as possible is done by the piece.

Dr. Perels, Prussia.—Women earn from £7 4s. to £9 a year; they are boarded like the men. Industrial farming has a good deal of work done by the piece. The average wages of field labourers are 1s. 6d. a day in summer, and 1s. per day in winter; as a rule they are paid in cash, not in rations. The rise of wages in harvest-time varies; it depends upon competition; in pressing times it is often double. We employ many women in field-work, who receive as a rule one-third less than men. Piece-work is becoming more and more general; all kinds of work are done by the piece.

Monsieur Lecouteur, France.—Wages are 1s. 7d. per day in summer, and 1s. 3d. per day in winter, without provisions; but much work is performed by the piece at this season and at other times. Few women are employed; their wages are 10d. in summer and 7d. in winter.

Monsieur Gustave Hamoir, France.—One or two men are hired by the year, and are paid a fixed wage of 24 to 27 bushels of corn for the summer months, and 2s. a week in money for the rest of the year, besides 8s. at the hiring and at festivals. In harvest-time piece-work is the rule, and a man may at this season earn from 3s. to 4s. a day, and a woman 1s. 8d. The general wages of women are 10d. per day in summer, and like the men they often work by the piece. I send you the tariff for the various operations performed upon the farm:—

Cutting hay, clover, lucerne, &c.; first cut...	3s. 6d. per acre.
Ditto ditto second cut	2 11 "
Bag hooking corn, oats, &c....	5 5 "
Putting in sheaves not bound	1 4 "
Ditto in shocks	2 3 "
Making binds	0 8 per 100
Cocking clover, lucerne, &c.	1 4 per acre.
Hand-sowing cereals	0 5½ "
Ditto artificial manure	0 7 "
Spreading dung, (16 tons per acre)	1 4 "
Ditto lime	1 4 "
Loading and unloading manure	0 2½ per ton.
Emptying the stables of manure	0 4½ "

Hand-hoeing beetroot four times ... 12s. 9d. per acre.

(The horse-hoeing is supplementary)

Hoeing "rutabagas" once (artichokes) ... 3 2 "

Drawing beetroot, cutting off leaves, and loading up ... 13 10 "

Setting out Jerusalem artichokes ... 10 10 "

Feeders of the thrashing machine, per hectolitre ... 0 0½ per sack.

Covering a stack ... 4 0 "

Monsieur de Pimpin, France.—A farm labourer engaged by the year, and living in the house, has £12 to £14 a year—his board comes to about as much—he costs, therefore, from £24 to £28 a year. Farm labourers living in the house are paid by the year, and do not receive anything extra in harvest-time.

Monsieur Lapointe, France.—The farm labourers are boarded and lodged, and receive from 16s. to 24s. a month all the year round. Thirty days' work at harvest times are paid with 4 cwt. of wheat.

Monsieur Bovet, Switzerland.—A great difference exists. With board and lodging 8s. to 16s. a month, without board and lodging 1s. 8d. to 2s. 6d. a day in summer, 10d. to 1s. 8d. in winter. In remote districts still less. Sometimes drink, particularly wine, in the vineyard districts.

Mr. Whitmore, Italy.—As the system of "métagage" prevail, little work is done by the day. When it is, the wages are from 8d. to 10d. per day in winter and spring, and 1s. 2d. in summer. For extra work, such as cutting wheat, grass, and thrashing, the wages are 1s. 6d. to 1s. 10d. The women belonging to the families on the "métagage" farms work in some way or other. Hired women are paid about one-fourth less than the wages paid to men.

Dr. Fuchs, Galicia.—Farm labourers receive in summer 9d. per day, and in winter 6d. They have no provisions. In harvest they only receive money, from 1s. to 1s. 2d. per day.

Dr. Fuchs, Austrian Silesia.—The usual rate of wages for women and children is 5d. a day for hoeing potatoes in summer and digging; a little corn brandy is given. The men are employed by the year, and have board and lodging and £4 a year. Women employed by the year get £3 with board and lodging.

Dr. Fuchs, Moravia.—In summer 8d. to 1s. 4d., in winter 6d. to 10d. per day; only in money. When cutting corn, four points of beer per acre.

Herr Fehér, Hungary.—Wages vary much, and little money is parted with by the employer. The labourers are paid in provisions, or by a per-centage share, generally about £2 16s. per year in money, 60 bushels of corn, food for a cow, and a pig, and fuel and lodging free. No extras in harvest. Women are much employed, and get from 7d. to 1s. 2d. per day. The plan of piece work is increasing.

Have you an abundance of labour or a short supply? Have wages increased during the last 25 years? If so, to what extent?

Monsieur Leclerc, Belgium.—Manual labour is becoming more and more rare in Belgium, on account of the great development of industry and the high wages obtained by workmen who leave the country for the seats of manufacture. The insufficiency of manual labour is partly supplied by the use of machines, which have much increased during the last 10 years, particularly thrashing machines. Reapers and mowers are not yet much used. Wages have increased 2d. to 3d. per day since 1846.

Baron Peers, Belgium.—Although the population increases the farm hands decrease. Several causes tend to this. Wealth increases, and everyone seeks to better himself. Farm labourers earn little, work hard, and are exposed to all weathers; they are, however, much attached to the soil. Our nearness to France causes us to lose many. Emigration, however, is not much felt. Manufactories and mechanical pursuits abstract many of our people; and, as labour is more in demand, owing to a higher state of cultivation being carried on, the abstraction of labour is the more felt. Wages have increased during the last 25 years 30 per cent.

Herr Joest, Prussia.—Labour has become rarer and dearer, and wages have increased during 25 years from 25 to 35 per cent.

Baron Gronow, Prussia.—Being situated in the neighbourhood of a large mining district, labour is becoming a little rarer; therefore wages are rising. Twenty years ago we did not pay more than 2½d. a day in the winter-time, and now

wages are 4d. per day. 9d. an acre was formerly the price for mowing and binding an acre of wheat; now it is 2s. 3d.

Dr. Perels, Prussia.—In many districts the want of agricultural labour is much felt. The cause is that the many industrial and manufacturing establishments attract labour from the rural districts. Wages have risen in the last 25 years about 50 per cent.

Monsieur Lecouteux, France.—Hand labour is becoming scarce, and wages have doubled.

Monsieur Gustave Hamoir, France.—We have sufficient manual labour. Our district is covered with sugar factories. The price of manual labour is high for a short time during winter, whilst it is low in other places. This allows workmen to tide over difficult times without suffering, and to wait for the spring season. Emigration is insignificant in this part. Wages have risen 20 per cent. during the last 20 years.

Monsieur de Pimpin, France.—Labour is becoming scarce. When the wages are not what workmen can get in commerce or industry there is a rush to the towns; but when the same price is given for agricultural as for industrial work the rush to the towns will be stopped. This can be accomplished only by good agriculture, and above all by the adoption of piece-work. We pay 50 per cent. more wages than we did 25 years ago.

Monsieur Lapointe, France.—Labour is becoming scarcer and dearer, and the efflux of the country population is daily augmenting. The wages of farm labourers have trebled during the last 20 years.

Monsieur Bovet, Switzerland.—Scarce in the manufacturing districts, abundant elsewhere. When manufacturing business was good, 10 or 15 years ago, the agricultural population migrated to the towns, but now it returns to the fields. Berne, Valais, the smaller cantons, have the greatest population and greatest pauperism, particularly the two first-named cantons. An increase of at least one-third in wages.

Mr. Whitmore, Italy.—In this district (Bologna) there is plenty of labour to be had, but it is not so in other districts. Within the last 10 years day-labour has increased in cost more than double.

Dr. Fuchs, Galicia.—There is plenty of labour with us since forced labour ceased some twenty years ago. Wages have somewhat increased.

Dr. Fuchs, Austrian Silesia.—During the last few years, owing to the construction of railways, there has been a lack of labour. We can obtain labour, however, from the mountain districts, and are also beginning to use more machines. Since the year 1848, when serfdom was abolished, wages have increased 50 per cent.

Dr. Fuchs, Moravia.—In consequence of the building of railways and the sugar manufactories, and the rage for building in large towns, labour is become scarce. Very considerably; about $\frac{1}{4}$ times at least.

Herr Fehér, Hungary.—The want of manual labour is painfully felt. Since the free development of Hungary wages have enormously increased, i.e., during the last three years. In many parts the increase is 150 per cent.

Are cottages found for the labourers, if not, what rent do they pay? Does each married labourer occupy a separate cottage, or is one house occupied by a number of families? Has each married labourer a small plot of land allotted to him; if so, is it free, or subject to a rent?

Monsieur Leclerc, Belgium.—Hired farm servants are lodged at the homestead. Day labourers are lodged at their own expense in small houses which belong to or are let to them. A labourer's house in the country costs from £6 to £8 a year according to its size. In the poorer parts of the country a similar house lets for only £3 8s. a year. The general usage in Belgium is that each family has its own separate habitation even in towns. In the country one never finds several families in the same house. Every family in rural districts has a kitchen garden, and very frequently a small field, which furnish potatoes and grain for the family consumption. These gardens and fields are rented.

Baron Peers, Belgium.—Married farm labourers pay rent for their dwellings. Each has as a rule $\frac{1}{4}$ acres of land, for which he pays £4 a year. They have also to pay the usual imperial and parish taxes, which amount to from 1s. 8d. to 2s. 3d. Each labourer occupies a separate house, and but few

live together. He generally has a little kitchen, one or two bedrooms, a small cellar, a pump, a little stable for his cow or goats, also a little granary for his crops.

Herr Joest, Prussia.—Cottages are not found. Rent varies according to the locality. A labourer, as a rule, has a separate cottage; and each has a small plot of land, for which he pays a small rent.

Baron Gronow, Prussia.—Dwellings are found for the labourers, but they pay for the use of them a day's pay weekly. The houses consist mostly of two rooms, and a stall for a cow. Generally two or more families occupy one house. The practice, however, varies. The careful proprietors let some $\frac{1}{4}$ to $\frac{1}{2}$ acres of land to the labourer, or a garden about the house, on which to raise potatoes and to keep a cow or some goats. The labourers on the larger estates are nearly always allowed to collect the dry wood in the forest on fixed one day.

Dr. Perels, Prussia.—Farm labourers on large estates often have dwelling-houses found them, for which of course they pay rent. In most cases several families dwell in one house. As a rule the fixed labourer who is hired for several years has a plot of land allotted to him, which is cultivated by the landowner, and for which no rent is expected.

M. Lecouteux, France.—The labourers are lodged on my farm. They pay a rent of £4 per year. They have a garden, a cow, and a pig. Each labourer has his own room. One house contains several dwellers—four is the average.

M. Gustave Hamoir, France.—The farmer has nothing to do with finding the labourer a dwelling. A labourer has mostly a cottage belonging to him, either bequeathed by his parents or built with his first savings. The poorest have to hire their house from some house proprietor. Each family occupies a separate house. The farmer has nothing to do with the wants of the labourer; in exceptional cases, however, he lets him a small portion of land to cultivate, for which a rent is charged.

Monsieur de Pimpin, France.—In general, labourers are charged rent for their dwellings. About £2 a-year is paid to the landlord, a garden being included. Each family is lodged separately.

Monsieur Lapointe, France.—The farm labourers are generally house owners, having a garden attached to their house. They are often owners also of a small plot of land. Each family occupies a separate house. Sometimes the labourer has besides a right to a portion of the land belonging to the parish.

M. Bovet, Switzerland.—It is rare for them to be housed gratis. They pay £4 a-year for house and garden. In Western Switzerland the farm labourers live in the villages. In Western and Central Switzerland they have generally their own house, the population in those parts not being grouped in serried villages, as in the West. Nothing fixed; generally not; in any case not gratis.

Dr. Fuchs, Galicia.—The field labourers do not get a house. They are mostly small peasant farmers who possess a house, or pay 10s. to 16s. a-year for one. They have no land given them by their employer, but frequently possess a piece of their own.

Dr. Fuchs, Austrian Silesia.—On large estates farm labourers have houses provided for them, 16s. to 24s. being deducted from their wages in lieu of rent. They mostly have separate houses. When two or three families dwell under one roof they live separately. They have generally a small piece of land free of tithe and tax, for which they pay 16s. to 24s. a-year.

Dr. Fuchs, Moravia: Cottages are not found. Custom varies as regards married labourers; in most cases they rent houses.

Herr Fehér, Hungary.—A number of families often live in one house. Sometimes the labourer has a separate dwelling. In most cases each married labourer has three acres of land allotted to him free.

Have the cattle in your district suffered from foot-and-mouth disease or pleuro-pneumonia, and have your sheep been attacked with foot-rot or small-pox; if so, have you found any treatment medical or otherwise, efficacious?

Monsieur Leclerc, Belgium.—Pleuro-pneumonia has made serious ravages in Belgium on several occasions, particularly on the farms of beet-root distillers, who fatten much cattle. No good curative is known. Dr. Willems de Haselt has proposed inoculation as a preventive, and this method is prac-

tised by a large number of distillers and farmers, who maintain that it gives good results. The special commission, however, instituted by the government to experiment upon this system, has not been able to conclude anything positive from the numerous experiments which it has carried on for several years past. The foot and mouth disease is prevalent at this moment in almost all parts of Belgium. The animals suffer from a fortnight to three weeks, but few die. Cleanliness and the use of oximel (a mixture of water, vinegar, and honey) are the means employed for combating the disease. Small-pox and foot-rot are not frequent amongst our sheep.

Herr Joest, Prussia.—Our cattle have suffered, but no treatment has been found efficacious except repose and cleanliness.

Baron von Gronow, Prussia.—My cattle have been free from murrain, foot and mouth disease, or affection of the lungs; but in my neighbourhood nearly every herd of cattle suffered from foot and mouth disease. Affection of the lungs is common, because cattle are nourished on many farms with the refuse wash of the potato distilleries, which are very extensively combined with the larger farms. The sheep are well all over the country. Animals never die of the mouth and foot disease, but lose much flesh and milk. Wood vinegar,* and sulphate of copper are used as medicaments with success.

Dr. Perels, Prussia.—Cattle suffer from many diseases, foot and mouth disease at this moment is general. Pleuro-pneumonia is often prevalent. Sheep suffer from inflammation of the spleen, also small-pox and scab. In each district there is a veterinary surgeon appointed by the state (Kreis-thierarzt), there are also many private veterinary surgeons.

Monsieur Gustave Hamoir, France.—Foot and mouth disease and pleuro-pneumonia are two diseases which are frequently prevalent amongst us. The former presents itself as an epidemic, contagious to the last degree. It extends from neighbour to neighbour, and attacks all the stalls without sparing one. Pleuro-pneumonia is permanent in certain farms, but it presents itself rarely in its contagious character. In my opinion this malady arises, according to the hygiene or sanitary arrangements of the farm. If the animals being fattened are fed to an extreme degree, if the quantity of food absorbed exceeds the assimilative power of the organs, pleuro-pneumonia arises, and arises all the quicker if the substances given to the animals contain irritating and volatile matter, such as alcohol, acetic acid, or active essential oils. If the animals do not receive the quantity of food sufficient for their existence, or the quality which suits them—for instance, a cow poorly fed and having remarkable lactiferous qualities, draft oxen which are over-worked—in these cases pleuro-pneumonia will arise. In the first case the affection is easy to combat, because it suffices to modify the conditions of feeding, to weaken the animal, and diminish the inflammation of the blood, a result which is obtained with ease; but in the second case, when you have to feed up the animal in order to restore the equilibrium of its functions, a long time is necessary, during which the disease progresses and carries off the subject; therefore, pleuro-pneumonia created in these last conditions is much more terrible than the other. It is my opinion that a good farmer ought never to have this disease except in extreme cases of want of foresight, the causes of which depend upon himself, or upon circumstances over which he has no control. Sheep are rarely attacked with small-pox or other disease except foot-rot, which prevails almost continually. To cure it we cauterize the feet, having previously washed them with sulphate of copper.

Monsieur de Pimpin, France.—We have never had pleuro-pneumonia, but we have had foot and mouth disease in the cattle. The treatment we have followed consists in cooling food, cleanliness of the stalls, washing the feet of the bullocks and cows with fresh water, cleansing them with clean rags, and rubbing the affected parts with ointment.

Monsieur Lapointe, France.—At this time the cattle are suffering everywhere from foot and mouth disease, against which no remedy is used. Pleuro-pneumonia is not known in this district.

Monsieur Bovet, Switzerland.—Cattle has suffered excessively in one or two localities where the sick beasts have been slaughtered immediately by order of the government. In eastern Switzerland there have been some cases of typhus

imported from Austria, which has been stamped out in the same way. In western Switzerland there have been some cases of foot and mouth disease in cattle, and foot-rot in sheep; it has never been dangerous, but seriously hinders the sale of beasts while it rages.

Dr. Fuchs, Galicia.—Not only my cattle, but that of the whole neighbourhood have suffered from the mouth disease. Pigs had small-pox and diseased feet. Sheep are very little bred in my district, they had foot-rot. It was the first time my cattle had foot and mouth disease. Rinsing with acids, but principally with cold water, had a good result. I had my beasts driven four times a day into the water, in eight days the disease began to disappear, and in four weeks the beasts were quite well.

Dr. Fuchs, Austrian Silesia.—We have suffered from foot and mouth disease this year. We have had pleuro-pneumonia twice; the first time I believe from want of nourishment, the second time from giving them too much. Sheep are inoculated for smallpox, and thus preserved from it. All we have to fear here with the sheep is liver worms.

Dr. Fuchs, Moravia.—Cattle: Foot and mouth disease.—Remedy: (a) an embrocation of vinegar and salt; (b) petroleum. Lung disease.—Remedy: To inoculate and isolate in a wood, with good result. Inflammation of the Spleen.—Remedy: Puncture. Sheep: Inoculation against small-pox, quite efficacious.

What burdens are there upon the land in your country in the shape of rates or taxes for the support of the poor? How much do they amount to per acre? If no tax is levied per acre, is the income of the proprietor, or are the profits of the tenant taxed for this object? If no taxes are levied for the support of the poor, how are the destitute poor supported?

Monsieur J. Leclerc, Belgium.—Landed property in Belgium pays rates to the Government, the Province, and the Parish. These rates are based upon the assessed income fixed by the assessor. The assessed income is generally 25 per cent. less than the real income. The contributions to the Government vary somewhat, according to the different districts of the country under consideration. It is on an average calculated at the rate of 0.067 of the assessed income. The contributions to the Province are on an average 0.15 of those paid to the Government. The contributions to the Parish are very variable, according to the districts. They vary from 5 to 50 per cent. of the contributions to the Government. There are no special taxes on the land for the support of the poor. The summary of the taxes noted above may be estimated on an average at 5s. 6d. per acre. These taxes are based on the income of the proprietor derived from his possessions. The farmer has also to pay personal taxes towards the Government, Province, and Parish expenditure. The poor are relieved by the *bureaux de bienfaisance*, or public relieving offices, in the rural parishes. In towns there are, besides the *bureaux de bienfaisance*, hospital-boards (*administrations des hospices*). These two institutions, which are under the control of the Government, have for the most part—the hospital-boards (*administrations des hospices*) always—properties of more or less importance, resulting from donations, legacies, &c. The *bureaux de bienfaisance* are subsidized by the parishes when they have no longer sufficient resources. Several hospital-boards, those for example at Brussels, Nivelles, and Namur are very rich, and cannot find ways to employ all their revenues.

Baron Peers, Flanders, Belgium.—All the land in Belgium is surveyed and assessed at 5s. 6d. per cent. Thus there are four or five classes of land, and it is upon the assessment that the impost is raised; for instance, a hectare (2½ acres) of land is rated in the register as worth £4. The State levies 5s. 6d. annually thereon, and upon this levy of 5s. 6d. are superadded "additional centimes," with which the State, the Province, and the Commune meet their expenses. The destitute poor are supported by the (*bureaux de bienfaisance*) public relieving offices, of the parishes and townships of the kingdom, all of which possess real property for the succour of the poor. Only workhouses are paid by the parochial Boards, which disburse for the poor contained therein, their daily expenses varying from 5d. to 6d.

Herr Joest, Rhenish-Prussia.—There are no burdens upon the land for the support of the poor; but each parish has to see to its own poor.

* I do not know the English expression for "Holzessig," perhaps methylated vinegar. It is vinegar out of the distillation of wood.

Baron Gronow, Silesia, Prussia.—The poor-rates are not paid by the landowners alone, but by every sort of tax-paying people: they are on land-tax, building-tax, income-tax, and the trade-taxes.

Monsieur Lecouteux, France.—All the taxes together upon land amount only to from 4d. to 6d. per acre. The taxes are levied upon the proprietor and not upon the farmer. The support of the poor rests with the *bureaux de bienfaisances* and private charity.

Monsieur Bovet, Switzerland.—In some cantons there are no burdens, land paying a direct tax like any other capital. At Neuchâtel the landlord pays for his land as his capital, and the farmer pays on his profits. In other cantons each pays on his revenue. The poor are generally dependent upon the parish and private charity.

Mr. Whitmore, Italy.—There is no special tax for the poor; the destitute are supported by charitable societies dependent upon voluntary contributions and legacies.

Herr Fehér, Hungary.—There are no poor-rates. The destitute are supported from the treasury of the parochial Board, to which all are bound to contribute.

What rates or taxes does the land have to bear for the maintenance of roads, bridges, &c., or are they maintained by tolls levied upon the passing traffic?

Baron Peers, Flanders, Belgium.—Formerly there were turnpikes to meet the expenses of repair and maintenance; now it is with the aid of State "additional centimes" that the roads are maintained. Formerly there was a system of voluntary labour of men and horses; all this has been abolished, and the new system answers.

Herr Joest, Rhenish-Prussia.—Maintained by tolls.

Baron Gronow, Silesia, Prussia.—The macadamized highways, as well as some of the bridges are kept in order out of the tolls. The common roadways are kept in order by the landowners of those communities through which they pass.

Monsieur Lecouteux, France.—The roads are maintained by the State, the Département, or the Commune; there are no tolls. The high-roads are maintained by the State. The bye-roads by extra centimes added to the fixed taxes levied by the Communes.

Mr. Whitmore, Italy.—There are taxes called "communal" and "provincial," also "tassi suol dell terra." These taxes are imposed upon the landowners or occupiers for the expenses of maintaining roads, bridges, canals, &c., and for regulating which there are commissioners expressly appointed. There are no toll-gates.

Herr Fehér, Hungary.—The Government maintains the high-roads; the provincial roads are maintained by the province. Turnpikes are abolished.

Is any portion of the expense for the punishment of crime and support of prisoners levied by any tax on the land or income of the farmer?

Monsieur Leclerc, Belgium.—All borne by the State.

Baron Peers, Flanders, Belgium.—No impost is levied to maintain criminals. The budget for carrying out justice (voted every year by the Chambers) takes into account these expenses. The expenses only for mendicity are at the charge of the parish.

Baron Gronow, Silesia, Prussia.—There is no tax on the land or income of the farmer. The State pays out of its revenues for the maintenance of criminal prisoners.

Monsieur Lecouteux, France.—The expenses of the punishment of crime and the support of prisoners are borne by the State.

Monsieur Bovet, Switzerland.—Both expenses paid by the State.

Mr. Whitmore, Italy.—These are all Government expenses.

Are there any compulsory payments either in tithes or rates for the support of the Church? If so, what is the amount per acre or upon income, on the case may be?

Monsieur Leclerc, Belgium.—There are no special compulsory payments, although the ministers of religion are supported by the State. The expenses of worship are defrayed by the revenues of the Societies for the Building of Churches, which are generally possessed of property; and in case of insufficiency the Government intervenes with a subsidy.

Baron Peers, Flanders, Belgium.—There are neither tithes nor compulsory payments for the maintenance of worship. The expenses are defrayed by the State out of its revenues, and are estimated for in the budget.

Baron Gronow, Silesia, Prussia.—The landowners are compelled to pay for church building. The other payments from landed property to the Church are converted into a rent payable to the State. That rent has a sinking fund, and the capital is made over to the Church. The rent varies much in different localities.

Monsieur Lecouteux, France.—There are no tithes or rates levied on land for the support of the Church.

Monsieur Bovet, Switzerland.—There are no rates or tithes for the support of the Church in the Protestant Cantons. I have no knowledge of what is done in the Catholic parts.

Mr. Whitmore, Italy.—The lands are subject to a payment called "decima," or tenth-parts, which in reality is about 12 per cent., 8 per cent. of which goes to the bishop and 4 per cent. to the priests. But a law has lately been passed for freeing the land of this tax or tithe, and allowing the proprietors to buy it up at so many years' purchase.

Are there any other imports or taxes levied upon the land, either for imperial or local purposes? If so, for what purposes, and what do they amount to per acre?

Baron Peers.—The parish tax is raised, as already stated by the several parishes, to meet all needs, and is levied according to its presumed wealth.

Baron Gronow.—In Silesia and some other parts of Prussia a land-tax existed for more than a century. In 1860 the land-tax was regulated all over the kingdom. It is paid to the treasury for no express use. As the land-tax is paid after a fixed estimate of the revenue, it is very diverse—bad land paying a small one and good land a high one.

Monsieur Bovet.—Imports are levied in some cantons for the destruction of cockchafers, lice, and mice, also for the keeping of a bull for breeding purposes, &c.

Mr. Whitmore.—Besides the taxes already given, there are Government taxes which amount to about 15 per cent., based upon the amount of the last valuation, which, however, is only equal to about one-third of its real value.

In your school system, is the land or the income of the farmer taxed for the support of the schools? Have you a law to compel the attendance of children at school until they arrive at a given age? If so, what is that age? If not, do the majority of parents send their children voluntarily? Have you a law to prevent children being employed until they arrive at a given age? If so, at what age do children begin to work upon the farm?

Mons. J. Leclerc, Belgium.—By our system of parish schools for the education of children of the working-classes, poor children are received therein gratuitously. The funds necessary for these schools are taken out of the ordinary resources. They are furnished in part by the parishes, and in part by the State. The State intervenes with subsidies, which amount generally to a third of the expense in the construction and furnishing of the school buildings. The province also grants subsidies for this object, but they are less important than those furnished by the State. There are at this time in Belgium 3,511 parish schools, 627 private schools subject to inspection, 1,492 private schools perfectly free; in all, 5,630 elementary schools. The first are attended by 882,484 pupils, the second by 73,824, and the third by 107,408—total, 563,718, for a population of 4,827,883 in our kingdom.—Compulsory education does not exist in Belgium. It has been a question during the last three years, and an interesting discussion on this subject took place recently in the Chamber of Representatives, but without result. This system has numerous partisans here, but it is generally believed that its application presents great practical difficulties. The principle is that Belgium, in spite of the considerable sacrifices that the Government has made during several years for the sake of elementary education, is not yet sufficiently provided with schools and school-masters to allow of compulsory education being efficaciously applied. The law allows benevolent societies to withdraw their succour from poor parents who do not send their children to school. This is the only measure of coercion which we have. The majority of parents send voluntarily their children to the parish schools. Statistics show that amongst the young men of 19 years of

age, who draw lots for the militia, there is only 24 per cent. who can neither read nor write; but this is not a precise basis, because many young men who attended the elementary schools have forgotten what they learnt when they come to the age for drawing for the militia. According to the statistics of the elementary instruction which I have given in a previous answer, the relation between the number of pupils and the total population of the kingdom is 11.7 per cent., but the number of pupils indicated does not comprise the children of the age of 7 to 14, which are admitted in large numbers to the ordinary schools and reformatories. Children begin to work upon the farm generally at the age of 14 or 15 years, when regular work which requires a certain physical force is required. In certain parts of the country children from 11 to 12 years of age are employed to drive cows, sheep, and pigs to the pasture lands, and watch them there. In this case these children attend school in the winter.

Baron Peers, Flanders, Belgium.—We have no compulsory school regulation for enforcing attendance, but instruction is free under laws issued by the State. The majority of parents send their children to school voluntarily.

Baron von Gronow, Silesia, Prussia.—School buildings are maintained by the landowners. The maintenance of the school-master is arranged in different ways. If he receive part of his salary in kind, say, in corn or fodder for cow, the landowners are bound to give it. This payment in money is distributed amongst the landowners and the houses. Sometimes a very small "school money" for every child is asked, not exceeding 1s. 6d. yearly for the child. In harvest-time there is all over Silesia a vacation of four weeks, and in the potato harvest a fortnight, during which the children are employed. If the children are not sent to school, a penalty upon the parents is enforced. As one part of the children goes to school in the morning and the other part in the afternoon, no inconvenience is felt.

Monsieur Lecouteux, France.—The cost of our schools is borne by the State and the Commune. Each scholar pays a fixed fee of 10d. per month for boys, and 1s. for girls. Education is not compulsory, but schools are more and more frequented. Children commence work upon the farm about 12 years of age.

Monsieur Bovet, Switzerland.—Education is gratuitous and compulsory for every class, and is paid for by the commune and the State. In the Canton of Neuchâtel children are compelled to attend school until the age of 14 years. There are evening schools for the period of 14 to 18 years.

Mr. Whitmore, Italy.—There are rural schools, free to the children of both sexes, provided by the taxes. At present there is no law of compulsory attendance, but the question has been noticed in the Chambers, and a law is expected compelling attendance until 14 years of age. The children are sent to school in the winter; at other seasons the schools are deserted.

Is the "métayer" system adopted in any part of your country? If so, with what result?

Baron Gronow, Silesia, Prussia.—Only where tobacco planting is common. Here there is a kind of "métayer" farming.

Monsieur Lecouteux, France.—The "métayer" system predominates in many districts because the farmers have not sufficient capital of their own.

Monsieur Bovet, Switzerland.—It is rare in Switzerland. The result depends upon the character of the contracting parties.

Mr. Whitmore, Italy.—The "métayer" system, or "mezzadria," as it has been called, is adopted by nearly all, the result being that nearly every kind of progress in agriculture is arrested. Under existing conditions, however, there is perhaps no better system for keeping the land from going back.

Is the transfer of land from seller to buyer simple and easy? or is it, as in England, hampered with legal expenses, delay, and difficulty?

Baron Peers, Flanders, Belgium.—The acquisition of land, although many guarantees are required, takes place easily. It is effected either by means of a public notary or from hand to hand. A registration fee, which amounts to 5 per cent, and a fee for inscription at the office of hypothec, which amounts to about 1 per cent. The notary prepares a minute of the stipulation of the sale, and delivers to the buyer an act of

transfer in due form. These are all the formalities in the case of minors, interdicts, or absentees. Then the tribunals are called upon to grant authorization by the entry into the assessment book of each parish. It is so easy to prove the property of each individual, as a plan is engraved by each parish, and divided into different sections. Each piece of land has its number. This has cost a good deal, but it is an admirable work. One can never be ejected. The revision of the assessor's book is made every two years by a surveyor paid by the Government. Every change of boundary alterations caused by purchase, are entered in registers for the time, as far as it goes, and rectified upon the plan of land plots of the parish. Thus, I have all the extracts of my property. At each change I betake myself to the central office, and the revision is made there and then. Three deposits of these maps are made. There is one in each parish, a second in the chief town of the province, and another at Brussels.

Herr Joest, Prussia.—The transfer of land is both simple and easy, but it is transferred in legal fashion. The stamp duty costs 1 per cent. upon the value. There are no hindrances or difficulties.

Baron Gronow, Silesia, Prussia.—The transfer of land is not so difficult as in England, but not so easy as we should like. We are urging a reform; nevertheless, an Englishman would think our system easy, simple, and cheap.

Monsieur Lecouteux, France.—The transfer of property is effected very readily.

Monsieur Bovet, Switzerland.—The transfer of land is very simple and easy.

Mr. Whitmore, Italy.—The transfer of estates is very difficult, as many formalities are necessary, besides a very heavy tax to the Government, amounting to 2, 4, and sometimes 5 per cent.

Herr Fehér, Hungary.—The sale and transfer of real property is saddled by no hindrance, but Imperial dues of from 1 to 8 per cent. are levied, according to whether the transfer is a gift, a sale or an inheritance.

Is any portion of the land in your country artificially irrigated? If so, with what result? and is the practice extending either by the application of town sewage or water?

Monsieur J. Leclerc, Belgium.—In some provinces, particularly in Luxembourg where the land is hilly and small water-courses abound, the water is used in the winter for artificial irrigation, but the results are not very satisfactory, because irrigation is generally badly conducted. The proprietors will not go to the necessary expense for levelling the land so as to facilitate the regular distribution and flowing off of the water. It is only in that part of the provinces of Antwerp and Limbourg, known under the name of "Campine" that well-established irrigation is found. With the view of fertilising this region, which 25 years ago was quite uncultivated, Government caused to be constructed about 120 miles of canals, which are fed by the River Meuse, and which serve simultaneously for navigation and irrigation. Since the year 1848 we have been able to create, by means of these canals, irrigated meadows, which occupy now a superficies of about 9,260 acres. The insufficiency of water has not permitted us to extend them more. The soil of the "Campine" district being on about a level, it is set out in ridges for irrigation, and this is effected by tapping the main courses. The comparative expenses come to about 52s. 6d. per acre. A new law on water-courses is at this moment before the Chamber. Its application will probably admit of the utilization, for the profit of the agriculturist, of those riches which are at present lost or badly employed on account of the state of the water-courses. Irrigation would then develop itself in a manner quite impossible at the present time. Sewage-water has not been used for irrigating in Belgium up to the present time. An English public company (the Belgian Public Works Company) is carrying out at this time at Brussels an important work of purification, which comprises the utilization of the sewage water of this town for the irrigation of 150 acres of meadow situate in the valley of the Senne. But this portion of the work is not yet begun, and it is likely that it will not give a good result, because the extent of the meadows to be irrigated appears much too limited for the quantity of sewage-water to be employed.

Baron Gronow, Prussia.—All over the land artificial water meadows exist, principally where small streams and a hilly or

mountainous configuration of the soil make the arrangement of water meadows after the "Trögger" system easy. The result is good where water is not wanting and the soil is not too flat. On 240 acres of water meadows in my neighbourhood where the land is too flat the result is bad, only aquatic grasses springing up.

Monsieur Bovet, Switzerland.—Water is generally utilized for irrigation as well as drainage with more or less skill in the application. Thus, in western Switzerland, irrigation is in its infancy, whilst in Aargau particularly, and several of the central cantons, it is carried out with considerable skill.

N.B.—The beet-root distillery referred to by me as being in course of erection, the locality of which I was not at the time at liberty to name, I am now permitted to state is being erected for Mr. Campbell, of Buscot Park, Berkshire, and the engineer is M. Jacques Barral, of 10, Basinghall-street, London, the son of the eminent French agriculturist, Mons. J. A. Barral, the proprietor and editor of the *Journal of Agriculture*. M. Barral, jun., has made beet-root distilleries his study, and he authorizes me to say he will be happy to give full particulars to any who may be interested in the subject.

SWEDISH FARMING AND PEASANTRY.

Mr. Jählin-Dannafelt, of Stockholm, Secretary of the Royal Agricultural Society of Sweden, who is also an eminent farmer and Shorthorn breeder, and well known to the leading agriculturists of this and other countries, thus reports on the Agriculture of Sweden.

The land in most of the provinces of this country is pretty equally divided, as to area, between large and small properties. The largest arable estates are, however, to be found in the more fertile provinces of Ostgothland, Westgothland, and Scania. Estates, combined with a large extent of forest land, may be chiefly sought for in the provinces north of the great lakes, Mälar, Hjelmar, and Wener.

It is only in the province of Scania that large farms, exclusively of arable land, can be found. In other parts of the country, with but few exceptions, farms consist of arable, meadow, pasture, and forest; the proportion of arable decreases the further one goes northwards.

In the central provinces, the arable soil is a strong but fertile clay. Here are large farms, containing 600 acres or more arable; others of middle size, from 100 to 600 acres; and many small ones, of less than 100 acres arable. The proportions of arable, meadow, and forest land in these parts may be taken as follows: for every 500 acres arable there are from 100 to 200 acres meadow, 200 to 300 acres pasture, and from 500 to 600 acres forest.

The largest farms in the environs of Stockholm consist of 3,000 to 5,000 acres arable, combined with 10,000 to 20,000 acres of pasture and forest. The smallest farms, maintaining entirely the family who till it, consist of 40 acres arable and meadow, combined with 60 to 100 acres pasture and forest.

The occupiers of very small farms have generally other resources beyond farming for the maintenance of their families.

The following table is extracted from the *Agricultural Statistics* of the year 1887.

The superficial area of Sweden is about 80 million Swedish acres (the Swedish acre is one-fifth larger than the imperial acre), of which there are:

Market gardens.....	49,059 acres
Arable and other land under cultivation	4,919,884 "
Natural meadows	3,923,828 "
Waste lands and forests	70,933,967 "
Total.....	79,826,738 "

There are owners of farms of 4 acres and under...	57,755
" 4 to 40 acres	146,819
" 40 to 200 "	22,664
Exceeding..... 200 "	2,697
Total.....	229,935

The number of tenants and proprietors cultivating farms of	4 acres or less	92,849
" 4 to 40 acres	4 to 40 acres	97,092
" 40 to 200 "	40 to 200 "	15,097
Exceeding..... 200 "	200 "	1,823

Total..... 206,861

It must be noted that most landed proprietors cultivate their own land, also that the same proprietor may possess or work several farms.

The tenements are comparatively small, but continually increasing in numbers. A small portion of most of the farms is let off to labourers, so-called "torpare," i. e., cottagers who pay in labour instead of rent. The number of these plots "torp" at the close of 1867 was 179,034. The area of such a "torp" seldom exceeds 4 acres of arable land; but pasture for a certain number of cattle throughout the winter and the right of wood for fuel are almost invariably included. The labour due for such a plot or "torp" varies between one and three working-days per week, besides a certain number of day-work done by women at harvest. On many farms such "torpare" furnish a large portion of the labour required.

The average money rent of small farms, where the land is of medium quality, is about 17s. per Swedish acre, and of large farms 11s. to 13s. per Swedish acre. The rent of the best quality land varies from 17s. to 35s. per Swedish acre, and for land of inferior quality 6s. to 11s. per Swedish acre. These rents are for arable and meadow land, but pasture and forest land are almost invariably added in the proportion already stated at a nominal rent, except when timber is sold. Rents are generally estimated at 5 or 6 per cent. of the fee-simple.

In Scania (the most fertile province) arable land fetches from £16 to £20 per Swedish acre. In other provinces from £8 to £16 per Swedish acre. In most cases pasture and woodland are included without being appraised. Should, however, the woodland be in excess of what is required for fuel, it may be specially appraised, according to its position and quality.

Small lots of land cost about 25 per cent. more than large lots.

Swedish landed proprietors have from time immemorial had the right, under certain restrictions, of subdividing their estates; recently, however, all such restrictions have been removed by the Legislature, so that this right is now unlimited.

My own intimate conviction is, contrary to that affirmed by the Government and Parliament (Riksdag), that if the subdivision of land is carried out too far, Swedish agriculture will suffer; indeed, experience has already proved this to be the case.

The abundance of small occupations induces small farmers, with insufficient capital, to purchase them, in most cases at such a price that they have no money left to farm the land properly, the result is that their profits are less than if they had rented a farm proportionate in size to the extent of their capital.

The pecuniary difficulties in which so many Swedish landed proprietors are involved, cause dejectedness, check improvements such as the times require, and render impossible that increased fertility of the soil, which would undoubtedly take place had they sufficient farming capital.

The facilities for acquiring land and the great temptation consequent thereon to become landed proprietors, create a state of things opposed to good farming, and therefore to national prosperity. It is, however, only right that I should state, that these views of mine are not entertained by the majority of my countrymen.

Leases are mostly for ten years. The crown lands, however, are let for a term of 20 years. Leases are always in writing, and seldom contain any stipulations as to cropping. It is sometimes covenanted that hay and straw may not be sold off the farm, and that no paring and burning shall take place; however, at the present time the right of selling fodder is granted, especially on farms in the vicinity of mining districts and large cities, where the sale of fodder for horses is a profitable item.

The Game Laws have been vigorously enforced during the last few years, and tended to the increase of useful game; the country is not, however, over-stocked. The abundant woodland also shelters the game and prevents it being hurtful to agriculture.

It may be here stated that beasts of prey are still very numerous in some provinces, which may be best judged by the fact that the annual value of domestic animals destroyed by them is about £3,000. The Government now grants a premium for killing beasts of prey, the aggregate of which premiums have frequently exceeded £4,000 per annum.

Owing to the extent of Sweden and its geographical position there is great diversity in the crops grown.

In the southern provinces and the islands of Gothland and Oland, grapes and walnuts ripen; the principal field crops are rape, wheat, rye, barley, oats, beans, peas, vetches, potatoes, turnips, carrots, beetroot, &c. In the central provinces, apples, pears, plums, and cherries ripen; the principal crops are wheat, rye, barley, oats, peas, vetches, potatoes, turnip, and beetroot. In the northern provinces, north of the river Dalelf fruit will not ripen; barley and potatoes are the chief crops, rye, oat and turnips in a lesser degree; the business of the northern farmer is indeed chiefly restricted to growing grass.

The rotation of crops differs according to the district and province. In the northern provinces the *one-course system* of grain every year on the same soil obtains. The *two-course system*, with bare fallow on one-half of the arable land, grain and to a lesser extent root-crops on the other half, still continues in the provinces round lake Mälär. The *three-course system*, one-third of the arable land in fallow, one-third in wheat and rye, and one-third spring crops, prevails in the southern provinces. In all these systems there is more or less meadow land attached to the farm, which produces hay.

Throughout the country, however, a more rational system is gaining ground, and in the southern provinces the following prevails, differing, however, slightly according to climate, soil, and the farmer's individual taste. It is a 6 to 10 course rotation, according to whether grass is grown during two or more years successively. For instance, on mild clay 1st fallow, 2nd wheat or rye, 3rd, 4th, and 5th clover and grass, 6th oats, 7th potatoes, 8th barley, 9th clover or vetches for green fodder, 10th wheat. On stiffer clay—1st fallow, 2nd rye, 3rd clover, 4th wheat, 5th vetches or peas, 6th barley, 7th oats. On light land—1st fallow, 2nd rye, 3rd roots, 4th barley, 5th and 6th grass, 7th oats. On sandy soil only the bare fallow is exchanged for root crops, and a shorter course generally pursued, thus—1st root crops, 2nd spring corn (barley or oats), 3rd and 4th white clover or grass for pasture, 5th rye. A good average yield per Swedish acre = 1.22 (say 1.5th) imperial acre, is as follows:

	Bush.	Lbs. straw.		Bush.
Wheat	40	4,000	Potatoes	500
Rye	40	5,000	Turnips	1,000
Barley	40	2,500	Beetroot	750
Peas	30	2,000	Red clover ...	6,000lbs. hay.
Vetches ..	40	3,000	White clover 3,000lbs.	"
Beans	50	2,000	Swedish " 6,000lbs.	"
Oats	50	3,000	Timothy grass 6,000lbs.	"
Rape	40	4,000		

The use of phosphates is increasing more and more; that of guano and Chilian saltpetre has almost ceased. There are numerous establishments in Sweden for the manufacture of artificial manures; besides which considerable quantities are imported. Nightsoil in a pulverulent form, mixed with lime, ashes, and earth, is in considerable demand. Phosphates are mostly used for root crops and rye, not often for grass. The quantity applied per acre depends upon circumstances; 2 cwt. per acre of phosphates is a fair quantity.

The depth of cultivation is 8 to 10 inches for roots, 5 to 7 inches for cereals. Subsoil ploughs, going to a depth of 12 to 15 inches, are being introduced, and will become general as the growth of beetroot for sugar is extended.

Wages vary according to the provinces. During the winter they are from 7d. to 1s. 1d. per working day of nine hours. During the summer, when the working hours are thirteen, wages are from 10d. to 1s. 8d. per day, all paid in money. Where the labourer boards with the farmer, as is customary amongst the peasantry, he only receives half the above amount. As already stated, the greater part of the agricultural labour is performed by the so-called "torpare," who are paid by an allotment on the farm. Land having recently risen in value, the "torpare" system is not found economical, and it is becoming the practice to employ married servants, who reside on the farm, and are paid partly in money and partly in rations, It

may be assumed that the yearly wages of a farm labourer reduced to money are from £17 to £22, according to the province. In this part of the country (about Stockholm) the annual wages of a labourer are £10 in money and the following rations:

	2 cubic feet of	Wheat
26	do.	Rye
12	do.	Barley
8	do.	Pease
20	do.	Potatoes
0.2	do.	Milk per diem
200	do.	Wood

and sufficient land to cultivate about 10 cubic feet of potatoes. This suffices for the maintenance of a family with two or three children. If the family increases the wife and elder children must work. Farm labourers engaged by the year receive nothing extra at harvest, but day-men receive extra pay, and there is an increase in rations. Women are employed in the summer, and receive about half as much as the men. Children are also employed, and paid according to their age and ability. Piece-work is increasing on the larger farms; it is confined to draining, weeding, raising fences, chopping wood, getting in root crops—mowing and haymaking: Reaping, harvesting, ploughing, sowing, and harrowing are done by time.

The supply of labour depends upon local circumstances and the quality of the harvest. When the yield is small wages are low and hands are many, but during and after favourable years the contrary is the case. In general, agricultural labour is sufficient; in many parts, indeed, superabundant. The superfluity is taken up by the mining industries and wood-felling, for which higher wages are paid but greater exertions exacted.

Wages have increased during the last 25 years at least 25 per cent.

Hired farm labourers have always a cottage rent free. As a rule several families live in one house, having separate rooms. The "Torpare," or such labourers as are allotted land in exchange for their labour, have always a separate cottage. As a rule every married labourer has a small plot of land allotted to him rent free.

The contagious diseases amongst cattle and sheep are most rare in Sweden, owing to the very strict laws which entirely prevent, or to say the least, render exceedingly difficult, the importation of cattle and sheep, as well as their hides and wools, from countries in which such diseases prevail. Cattle-plague is unknown. Foot and mouth disease has not appeared for the last twenty years. Pleuro-pneumonia only once, about ten years ago, in a herd of cattle imported from Scotland and Norway. As soon, however, as the disease was discovered, the whole herd was slaughtered on the spot! Foot-rot and small-pox in sheep are diseases unknown in Sweden. The importation of cattle, sheep, &c., from countries in which cattle-plague has raged, is altogether prohibited for a whole year after its disappearance in that country. Cattle, sheep, &c., imported from countries in which foot-rot, foot and mouth disease, pleuro-pneumonia, or small-pox is raging, are subjected to a rigid quarantine.

Our poor-laws compel each parish to support its own destitute or disabled poor. A rate is levied upon each tax-payer in proportion to the property or income-tax he pays to the State. The contribution of the whole country for the support of the poor amounts to 1s. 1d. per head of the entire population; the aggregate is £200,000, the paupers being, of course, deducted. Of this tax about 10d. is paid by each country resident, but 3s. 1d. by each citizen. The tax paid to the State by landed proprietors amounts to about 1.20th per cent. on the assessed value. Tenant-farmers pay 1 per cent. of their assessed income from their farms. In the capital where I reside, the poor-rates paid by landed proprietors and tenants amount to about 40 per cent. of the taxes paid to the State. The excessive burden of poor-rates upon communities, increased through the claims of those able to work and other causes, has called forth much discontent with the laws; the present law which admits the claims of individuals still able to work being able to claim relief, has been repealed by the last Parliament, and only awaits the sanction of Government.

The new law does not recognise the absolute right of individuals to obtain relief from the parish poor rates, unless they be insane, or destitute orphans under the age of fifteen;

paupers disabled by age, lameness, illness, or other causes, may obtain relief, provided the parish poor board think it right to grant it. Roads and bridges are maintained by the landed proprietors, but their contributions, being in labour and material, are not easy to estimate. There are no tolls or turnpikes.

The punishment of crime is paid by the State.

The church and clergy are supported by tithes, or a rate upon the land; it varies according to localities, but is not a serious item.

For State taxation, land is divided into different classes, on which taxes, differing considerably in proportion, are levied. Taxation differs considerably in the different provinces. The basis of State taxation is the so-called "mantal," that is the area upon which a household engaged in agriculture and cattle-breeding may be maintained. The original "mantal" differed considerably, but in the course of time have become further altered by cultivation; it is therefore difficult at present to produce a trustworthy standard for comparison; one of the heaviest burdens upon the land consists in the support of a large number of army and navy pensioners.

Elementary education is accorded gratis in the Public State Free schools. For the support of these schools a national school rate of about 6d. is levied on each male above the age of 15, and about 3d. on each female. Besides this, a tax,

adapted to the wants of each parish, is levied upon each tax-paying inhabitant thereof. In the district to which I belong, this tax amounts to about 60 per cent. of the property or income-tax paid to the State. Besides these contributions, considerable sums are granted to the schools by the State, and no expenses likely to conduce to the spread of useful knowledge are shunned.

The attendance of children at school is compulsory. Parents are bound under legal penalties to see that their children go to the schools; when requisite the children receive the necessary food in school. The obligation to attend school commences at the age of 7 years, and continues until the children have acquired the minimum of knowledge prescribed by the laws. They generally cease their attendance at the age of 14 or 15. There is no law which prohibits the employment of children in agriculture before having attained a certain age. There is such a law for factories. Children go to work upon the farm as soon as they leave school. The *métayer* system is unknown in Sweden.

The transfer of land, although controlled by the law courts, is very simple and easy; the legal expenses seldom exceed 1 per cent. of the fee-simple.

Irrigated meadows are common in the northern parts of the country where rivulets abound. The result, dependent upon the quality of the water, is as a rule exceedingly favourable. Town sewage is not yet used for irrigation.

INOCULATION AS A PREVENTIVE OF PLEURO-PNEUMONIA.

The Tyrant of old sought to encourage the patentees of a new pleasure; but in these utilitarian times we exercise our invention through more commendable channels. We seek to develop new industries, new agencies, and new remedies. We combat continually in our every-day life the despotism which declares there shall be nothing new under the sun. On the contrary, we exist rather with a faith in all that the novel and strange may do for us. The mere precedent of practice is more to be defied than respected; and a man, to command attention, should talk of doing something that no one ever did before. The farmer is especially open to such influences, as, if occasionally he has been somewhat slow in action, it has certainly not been from any want of prompting amongst those who have been anxious to set him going. Often enough, however, he is quite willing to go with them, a disposition that he is evincing at this very moment. With regard to one of the agriculturist's chief difficulties, the mortality amongst his stock, if rinderpest cannot be cured pleuro-pneumonia may, or better still, altogether averted. The last new thing under the sun is that inoculation is your only true panacea; in order to thoroughly eradicate the disease this is the operation to which our breeders and feeders must resort. And to this they very dutifully resort accordingly. A deputation has been sent to London, and an inoculation trial is about to take place in Cheshire, as we believe another has been arranged for in Norfolk.

But still there is nothing quite new under the sun. If, as the learned say, we import our ills, we can also import the correctives. Inoculation has, it seems, proved singularly successful on the Continent, and therefore it is only right and reasonable that deputations should be started and inquiries instituted. But, alas! again there is nothing new under the sun. These deputations have been started, and these inquiries have been instituted. It is now close upon twenty years since that Professor Simonds, at the instance of the Royal Agricultural Society of England, went to Belgium, where he not only watched the "cases" of other Professors, but took cases under his own especial charge, whereby to prove the value of inoculation as a preventive to the

spread of pleuro-pneumonia. And these are the conclusions at which, after a prolonged and careful investigation, our representative of the English schools arrived: "That inoculation of cattle, as advocated and practised by Dr. Willems and others, is not founded on any known basis of science or ascertained law with regard to the propagation of those diseases called specific. That pleuro-pneumonia occurs at various periods of time, after a so-called successful inoculation. And, lastly, that the severity of pleuro-pneumonia is in no way mitigated by previous inoculation, the disease proving equally rapid in its progress and fatal in its consequences in an inoculated as in an *un*-inoculated animal." This is tolerably strong, the more particularly when collated with the elaborate Report upon which such an opinion is grounded. But then, as we have said, all this happened some twenty years since, and in the interim the theory may have been improved upon or perfected, either at home or abroad. After Professor Simonds, certainly the most practical authority in this country, would appear to be another member of the Veterinary College, with whom the Cheshire deputation very properly sought an interview, that they report in this way:—"Mr. Priestman supplied us with a list of fifty-seven names of persons for whom he inoculated 4,515 cows from the year 1858 to 1863, and many cattle-keepers, he informed us, practised the operations themselves in their own stocks. On the other hand, he admitted that some cows took the disease after having been successfully inoculated, and that some died from its effects. The proportion of deaths was difficult to state, he said, as the rule with them was to sell their cattle to the butcher as soon as attacked." There is certainly not much in this, neither is there in the evidence of the cow-keepers by whom Mr. Priestman was chiefly employed. According to the Cheshire deputation, "the opinion in favour of inoculation was evidently given more as an expression of hope and of feeling than of direct testimony from actual experience. They resorted to it on a first attack of the disease, but as a rule did not inoculate so long as their stocks were healthy. When asked why they did not inoculate all their cows as soon as they

came into their possession, or when they were quite free from disease, as a safer precaution if their theory was correct? they answered, "There was always a risk of some cattle dying from the effects of inoculation, and they thought it best to let well alone." Still, it must be ever borne in mind that the theory is of foreign rather than of English growth, as, moreover, it has manifestly so far taken but little root in this country. Hence all the greater necessity for tracing it home, as we believe Professor Simonds did most efficiently some twenty years since. Now, however, after some very recent experience, another good authority, Mr. James Howard, the member for Bedford, writes thus:—"All I can say is, that many sound, practical farmers in Belgium, Germany, and France seemed to place much faith in the practice. M. Dumont, of Fleurus, Belgium, is quite an authority in that country. On his farm I saw a considerable number under inoculation." Nevertheless, as his letter runs on, Mr. Howard himself would not promise to place much faith in the practice:—"I have suffered much upon my own farm from pleuro-pneumonia, and hence I strongly urged on Mr. Forster before the introduction of his Bill the necessity for dealing with this and the foot-and-mouth complaint, as well as making provision for rinderpest. I agree with you that the only plan to rid the country of this ruinous disease, pleuro, is combined exertion to stamp it out." This is bringing us back very much to where we were. Still, of late years inoculation has been much resorted to abroad, and if on the Continent it is spoken of as "a sovereign remedy," it is only fair that we should once more cross the Channel and ascertain its effects, as Mr. Howard has hardly supplied us with such material data.

According, then, to *The Veterinarian* for January: "If we take the Continental view of the subject, the prospect is not all sunshine. In Germany, Belgium, and Holland the operation is extensively practised, and the faith in its efficacy is unbounded; but we have not yet heard that pleuro-pneumonia has been exterminated in any of those countries. Perhaps we may be more fortunate here; but it seems rather odd for us to get into a state of excitement in favour of a practice which originated, and is most supported in those parts of the world whence, as we persistently assert, animals are constantly sent to us infected with the disease, which, if the theory of inoculation is worth anything, should have been long ago eradicated." Of course this is the awkward part of the whole story; we continue to import the disease from countries where, properly speaking, there should be no disease whatever. To promptly eradicate pleuro-pneumonia we must resort to inoculation, as practised in Germany, Belgium, and Holland, where pleuro-pneumonia has *not* been eradicated. It would be well for the present to confine the argument as directly as possible to this point; although, of course, a variety of collateral issues might and have been raised as to beasts generating or developing disease on their travels, and so forth. Sufficient be it here to ascertain whether inoculation has eradicated pleuro-pneumonia in the stay-at-home stock, in the homesteads of Germany, Belgium, and Holland? In Sweden, according to a further supplement to Mr. Howard's paper which we give to-day, pleuro-pneumonia never showed itself but once, the immediate remedy being the slaughter of the whole herd.

We confess that we have little hope of the results about to be reached in Cheshire and Norfolk; but if these experiments are to be worth anything, we do trust that those who undertake them will do so only after having thoroughly studied the Reports which Professor Simonds addressed in 1852 and

1853 to the Royal Agricultural Society of England. These papers furnish a very useful guide as to how such trials should be conducted, as well as to how far they can be trusted. It may be, that from the outset the Professor put but little value upon the theory, whereas the Cheshire committee would look to set about the business in a far more sanguine spirit. This feeling might of itself tend to render the investigation not so searching as it should be; but with the *Royal Journal* at hand the Professor's objections, doubts, and more decided protests must be met and overcome to make the experiment ever "worth the candle."

"In treatment," says Mr. M'Combie in a lecture he delivered only a year or two back, "I have no confidence, having tried everything that could be tried and completely failed." Still, a little further on he admits "Mr. Sorely [and I were brooding over this state of matters, when I asked him whether he could do anything to save the herd. He said, 'I will think over it till to-morrow.' He came on the morrow, and seven successive evenings, and administered to each animal a drench, and he would trust no one but himself to do it. I believe there were three changes of medicine; not one animal which got the medicine took the disease, although they had been standing in the midst of it. There was one worthless old milk cow amongst the others that I did not think it worth giving the medicine to; she took the disease, and was fed with gruel for fourteen days, and recovered, while the others continued in perfect health." Is there anything so satisfactory as this in all the evidence on inoculation? And when the Cheshire committee has got through its work in that way, would it not be as well to start another deputation for Tillyfour?

TITHE COMMUTATION. — SEPTENNIAL AVERAGES.

TO THE EDITOR.

SIR,—As many of your readers may feel anxious to know the result of the Corn Averages for the seven years to Christmas, 1869, published in the *London Gazette* of this evening, viz.:—

			s.	d.	
Wheat	...	...	6	3½	per imperial bushel.
Barley	...	...	4	6½	"
Oats	...	...	2	11½	"

I beg to state for their information that each £100 of tithe rent-charge will, for the year 1870, amount to £104 1s. 4d., or nearly 4 per cent. more than last year.

The following shows the worth of £100 tithe rent-charge for the last seven years:—

For the year 1864	...	...	...	...	103	3	10½
1865	...	...	...	...	98	13	10½
1866	...	...	...	...	97	7	9½
1867	...	...	...	...	98	13	3
1868	...	...	...	...	100	13	8
1869	...	...	...	...	103	5	8½
1870	...	...	...	...	104	1	0½

The average value of £100 tithe rent-charge for the 34 years elapsed since the passing of the Tithe Commutation Act, is £100 19s. 5½d.

I am, Sir, your most obedient servant,

MONTAGUE MARRIOTT,

Editor of "Willich's Tithe Commutation Tables."

26, Montpelier Square, 4th Jan., 1870.

THE NEW FARM.

A fearful gusty (clearly a *feminine*) wind blowing! Went on the river with my youngest born; glad to get off again. The waves ran half-a-yard high, and the savage tempest blew so lustily! twice the mast was unshipped, and the little craft heeled over far more than pleased me. By myself I should have persevered, but I didn't like to risk the life of little Benjamin, who sat wet, but calmly unconscious of danger, with the tiller-ropes in his tiny hands, as I attended to the sheet and an occasional oar. Several lots of partridges rose along the bank in places. How odd that they should choose so cold a fair on so boisterous a day! taking the air, I suppose, as ladies after the season on the Brighton strand; and the swans, too—four of them—for one has chivalrously detached himself, and taken up with a lonely maiden some eight miles lower down the river than this (her former swim was ruthlessly murdered by some boys last year); they sailed about our craft so contemptuously, and saw us off, or rather off and on again, for we were driven ashore. I don't know how often during the first half-hour, ere we got off, by force of wind and current. How oddly they strain their necks out to meet a gust! One could not help remarking it. It is so inellegant in so graceful a bird. I suppose it enables them to expose less surface to the impulse of the wind. As we could not ascend the stream, the little chap on landing made a merit of his mishap, and emptied his pockets of his biscuits, which he threw in morsels to the grateful birds, who, after much alobbering and sucking, to soften, I presume, the too hard outside, finally disposed of the floating feed.

This reminds me that the tomtits are in luck, and the linnets as well, for the Indian corn, which one fancied was, from its weight, proof against their purloining, having been soaked in the rain, they get in holes and corners and against stones upon the walk thereby speedily managing to scoop the contents of the berry at a destructive pace. All I can say is the pheasant must look out and feed faster.

Oh! such sadness pervading the whole household; the dear, old, pet terrier, Vic, is no more. For some weeks she had been evidently ailing. She had also an excessive weeping at the eyes. She seemed to have caught cold through sleeping out one severe night on a mat by the lodge-door. She had been jealous, too, of another dog which had been imported into the school-room, so for some weeks she honoured me in my study with her presence, and used to sit so prettily gazing into the fire, with her head upon her paws on the fender. To the last she tried to follow the children about, but had to be carried home one day, and another afternoon she was found lying on some hay under the rick quite chilled. A little girl carried her in, and carefully tended her; but all this I did not know until afterwards. When, however, the household became aware how seriously ill the old pet was, we had her put into a hot bath, and tenderly packed in a hamper before the fire. I got up early, before the servants were stirring, to see her; and although evidently in much pain, it was quite touching to watch the sad expression of her peculiarly melancholy brown eyes as she laid her head on one side against the hamper, and seemed to be saying a long good-bye. She did not long survive, and it has cut us all to the quick. One does not know the value of a pet, to which tender associations cling, until we lose it. We had her stuffed,

but the eyes were so great a failure that we have banished the case from the house, preferring the image that lies of her upon our mental mirror.

We have been unfortunate, too, with the steam-engine. We had an idle fellow imported to put it up, who, after three-weeks' work, finally got the boiler so fixed that we cannot keep up steam. The worst of living in the country is that we cannot get skilled workmen to carry out our plans, and "city mice" introduced take upon them so many airs.

This will end in the apparatus being sold again, and the horse-tackle being reverted to.

To return, however, to the spot I always delight in—the river bank. When compelled to strike our sail and drift down home, I took the opportunity of testing the action of my precious jetties, and steered by the bank down. Quite smoothly the water lay within them, although so rough outside. (I find everybody asking me about them now, for their unexpected success is a puzzle.) So thoroughly effective is their action, that I could not get my boat near the bank. Acting as a buffer to the current on which we drifted, they would have nothing to do with us. I shall be so glad when the spring has come, and consolidated the new earth upon the slopes with well-rooted grass. We shall then be beyond the reach of tremour.

How odd it is that, despite all the wet we have had lately, the springs have not "come home" yet. The well that supplies the kitchen-range is lower than it was in June.

"As the days lengthen,
So the springs strengthen,"

is an old, and I suppose—at least from my own experience—a true adage. Why it is I don't know. One would think that if a fair tap were flowing in June, that an October soak would sufficiently re-supply the vessels. In practice it is not so however.

Alack-a-day! Since writing the above (for one stuffs this pie at odd hours as occasion serves), such a dire flood hath invaded us, or rather a tremendous reduplication of floods—one yet more angry over-riding another. Such an onset of waters has not occurred in this valley since 1852, bearing along with it a spoil of all sorts from the upper country—dead carcasses, and gates, and mighty trees, and in one instance a set of steps belonging to a church ten miles above us, that is built upon the bank. The boatmen were driving dangerously in their punts backwards and forwards all the daytime that the light lasted, fishing out the waifs and strays. One night before the flood arrived at its highest I got a moonlight stroll beside the rising waters. The dense, dirty volume had been visibly swelling for hours, and was just beginning to over-spread the meadow along its immediate margin, beside making insidious inroads by every hollow spot and ditch. I had some colts out, which I did not want drowned; so merely changing one's dress-boots (we had just returned from the warm shelter of a festive drawing-room—a very different climate to that to which the colts were submitted), and throwing on an Inverness cape, I hurried down to see how far it might be safe to trust the night, as our head servant, who is a stranger to these parts and not yet used to the river's vagaries, had not thought fit to have them moved, and it struck me as hard lines to disturb at such an hour a zealous man. Well, I

hurried down, and was enraptured. The long grass on the orchard slopes, kept as rowen for the ewes and lambs in spring, rustled quite crisp under my tread, for the air was frosty, and when the moon shone—a brilliant all but full moon—each blade glistened with a coronet of diamonds. Then the river, when I reached it, lay in a lovely lagoon, so calm, so lustrous, so lovely reflecting at once each twinkling star—the dark hanging woods and sharp cut cliff. So calm is the pool that I doubt its advance upon the meadow, and have to watch by the light of the moon, where it is nevertheless most determinedly though sily stealing on through rootlet and mould-heap. You can tell the fact only by watching the gradual disappearance of some glistening leaf as it is swallowed up, or the movement of some floating twig; and our boat there—she who played us, as I have recorded, so nearly false—floats gaily and indifferently buoyant on the surface of a flood, which though so treacherously still upon the one side, upon the other pours along, swishing surlily with a deep smothered sound suggestive only of suicide.

But how after all did the jetties answer? Perfectly. And how did the newly-made banks hold? Excellently,

so long (I am bound to record all my experience) as the flood did not rise above the top of the stone, where it is built into the land. Not an atom of the newly disturbed soil gave way until then. But when the angry waves surmounted the uppermost stones and over-ran the whole plain, then, resenting the obstacles to its progress, it did wash off a good part of the softest mould, accumulating however a quantity at the bottom of the river between the piers. So that after all, I am upon the whole rather a gainer than a loser. Where I had tarred the slope it did not suffer. It was only where the holes had been filled with soil and sown too late in the season for the grass to gather root. I am rapidly repairing the damage with a paring plough, taking off the rough surface of some inferior sward, which I beat and peg down, and which I propose to overlay with close small leaved twigs, which old Melon has been trimming off the avenue, stuck in flat and closely like the feathers on a pheasant's breast. Over this the water will glance, as I know by experiment already made. Next year I shall raise the jetties a foot above the mainland, and then no harm can possibly occur to the bank.

VIGIL.

THE CULTURE OF THE BEETROOT.

[Note on a new method of cultivating and increasing the productiveness of the soil; forwarded from the Secretary of the Board of Trade.]

Of all cultures, the one which yields most per acre is that of the beetroot. But with the methods that have been in use down to the present time this culture is extremely exhausting, as it draws off from the soil potash and other chemical substances to an extent sometimes amounting to five per cent. of the weight of the beetroot. Where this kind of culture is carried to a high degree of development, landowners usually try to repair the loss of alkali sustained by the soil by means of chemical ingredients. Independently, however, of the great expense incurred and minute care necessitated by this system, great uncertainty generally prevails as to the proper proportion of chemical substitutes to be infused into the soil.

Now I am able to state that a method at once more rational and more economical has been employed for six years, and has been attended with the most favourable results, inasmuch as the beetroot has not only been cultivated for six successive years on the same soil, but the soil itself so much improved as to be worth double its former value. Thus this new system, far from exhausting the soil, may, on the contrary, be employed—1st, in the cultivation of land, the subsoil of which contains clay covered with a sterile layer of one metre; 2nd. The value of the land is enhanced, or at all events a larger yield will be obtained. I have seen a trial field of about fifty English square rods on which beetroot has been cultivated without intermission for six years without any inconvenience having been experienced from insects. Its produce has uniformly been six tons per square rod, English measure. The system consists in restoring to the soil all that has been taken away by the culture of beetroot, its elements, viz., carbon, hydrogen, and oxygen, being constantly carried off into the inexhaustible receptacle of the atmosphere. The pulp, being the residue from the mill, forms a very nutritious food. Instead of being aqueous, as hitherto, but a small proportion of flour and other substances is needed to make it fit for food for animals. The azotic and other elements withdrawn from the land by the sale of the cattle are restored to the soil. The residue left in the still is conducted over the soil by a system of irrigation which restores to the land in the precise proportion required the alkalis contained in the beetroot. The beetroot requires in the subsoil a large amount of

alkalis, which would become troublesome if the plant were intended for the manufacture of sugar, but which are quite innocuous when the beetroot is intended for the production of alcohol. The implements used are simple, and much care has been bestowed for the last six years to diminish the labour, and to adapt it to the capabilities of the labouring population. The object in view may be shortly stated to be, to make the soil yield the greatest possible amount of produce, by not removing from it by sale any substances but those drawn from the atmosphere. The lands which for six successive years have produced beetroot have increased two-fold in value. An outlay for working material of £4,000 sterling would permit the advantageous application of this system to a surface of 700 to 800 English acres. Five artisans and eight labourers would suffice to carry on the work, which is, so to say, self-acting. The work is done during the four winter months, which in most countries are devoted to the fattening of cattle and in-door farm-work, at a time when labour is generally abundant. This labour produces 64,100 English chaldrons of alcohol at 95 degrees. When the fermentation of the juice has once set in, it is kept up by the germs of fermentation contained in the juice itself.

To the expenses mentioned above, including labour, the redemption of capital, and the fuel, are to be added those for maintenance. Thus a large allowance being made, the manufacture of the alcohol leaves a considerable profit, which would be further largely augmented by the profits resulting from—1st. The improvement of the soil; 2nd. The fattening of cattle by means of a very rich food.

All that I have stated above is based upon experiments made on a large scale for more than six years; and I would gladly undertake the introduction into England of the same system, provided those who take an interest in the matter would previously come over here in order to satisfy themselves with their own eyes as to how completely the theory here stated has been justified by the practical results obtained.

Brussels, the 22nd November, 1869,

(s.)

G. M. KARRIE,
Civil Engineer.

THE DEVONSHIRE LABOURER.

At the dinner of the Devon Central Chamber of Agriculture, on Jan. 19th, at Newton Abbott, Canon Girdlestone said: I am now about to speak a few words of myself personally and individually, though not, I hope, egotistically—for myself, then, the tie that binds me to the land is not merely of a public nature; it is also domestic. For centuries past my family have held, and now hold, land in the county of Norfolk, and though, as the youngest son of a youngest son, I was of course sent forth into the world to seek my fortune, still I passed my childhood amidst, at that time, the somewhat rude ploughs and harrows of that now most magnificently cultivated district. I have still the same connection with the land. It is not, therefore, simply that I feel—though I do strongly feel—that the laity are the bone and sinew of the church of England, and that it is in their, at this eventful crisis, taking up their proper position, asserting their own rights, and not shrinking, however troublesome it may be, from their own responsibilities, that depends, at this time, the church remaining in reality, perhaps even in name, the national church—a church opposed to priestcraft, as I believe, and favourable, as I believe, to free intellectual inquiry, and the development of civilization and improvement. But, over and above these considerations, my own special and particular sympathies are, by birth and education, not merely with the laity, but with the landed interest. I therefore say it was with great pleasure I received the kind and courteous note from your secretary with an invitation from your committee to be present at dinner with you this day. I hope I may not be presuming too much in speaking of your invitation as partaking somewhat of the nature of an olive branch. All I can say is this, that if I am correct in the supposition, I am as anxious to accept the olive branch as you can be to offer it. If, sir, there have been some hard words passed—if I have sounded the alarm perhaps rather too loudly for some sensitive ears—if there have been faults on either side, and generally there are faults on both sides, then I say let us forget it all, and in the old familiar language “let bygones be bygones.” If you should think fit to make me a member of your Chamber, all that I can say is that I will work with you and for you with heart and soul for the common weal and the common good. When two Arab chieftains meet, however bitterly opposed they have been before, if once they have broken bread and eaten salt together, it is the same as if they had sworn eternal friendship. Now, you members of the Chamber—landowners and farmers—you have broken bread at this table this day with the Vicar of Halberton; and I say, gentlemen, let us swear eternal friendship from this moment—friendship, not for any selfish end—friendship, not for any particular individual advantage—but friendship for the purpose of promoting to the utmost of our power the common weal and prosperity of all classes. For it can't but be as plain as plain can be—that there can be no prosperity to any class unless there is sympathy for all classes one with another. It is when the landowner, and land occupier, and labourer, and, as the Chairman said, the poor “passen” himself, are all agreed and united together, that we shall arrive at the common weal and prosperity of all. This county is one, as we here all well know, of many honourable and glorious traditions—traditions of war, of art, of commerce, of trade, of manufacture. I, for one, as a man of peace, cannot express any wish that our glories in war should be renewed. I wish most anxiously that all the future victories of this country should be marked not by blood, but by the peaceful trophies of education, improvement, enlightenment, and civilization. Let us then unite for that which is the greatest and noblest mark for all of us to aim at—the improvement of the social position of everyone with whom we move and mix. With a long pull, a strong pull, and a pull altogether, let us unite to do our best to make this county of Devon—this county of ancient tradition and renown—this garden of England as it is justly called, with its almost Italian climate, and fertile soil—let us endeavour to make this county that which it seems to have every capability of becoming, as an agricultural county, the best cultivated in

the empire—a county in which its landlords shall be far and wide known as the most kind and considerate towards the labourer, and in the treatment of the tenant—a county in which the farmers shall be known as the most intelligent, enlightened, and enterprising of their class—a county in which, lastly, the labourers shall be spoken of as the best-fed, the best educated, the most contented, thriving, thrifty, happy, rosy-cheeked peasantry in the land.

Sir LAWRENCE PALK, M.P., said: He regretted that the Duke of Somerset and Sir Stafford Northcote were not present, but if any consolation could be afforded for the absence of such distinguished men it would be found in the splendid speech which they had just had the pleasure of listening to from Canon Girdlestone, one more replete with kindness of feeling and with better expressions of friendliness and good wishes it had not been his good fortune to hear. He (Sir Lawrence), in common with others, had thought that both in his writings and in his speeches the rev. canon had been extremely hard upon the landowners and farmers of the western counties. But he thoroughly recognised in him the same spirit which actuated all landlords, and he believed all farmers, namely, a desire to do the best they could to raise and promote the condition of the agricultural labourer, and the interest of that profession to which they are allied and which they represent. He was glad that he had one common feeling at least with the rev. canon, in which he cordially agreed with him. He could agree with every word that he had written with reference to the incidence of the Poor Law upon the condition of the labourer, and upon the taxation of the agricultural interest. He had heard it said that the agriculture of this county was very far from what it ought to be, that the landowners were unmindful of their duties, that the tenant farmer was ignorant and unskilled. He thought that was a superficial view to take, because as a point of fact he would venture to say that in Devonshire he could show as good farming as would be found in Norfolk or in the Lothians of Scotland. The agriculturists of Devon were not at the low pitch they had been represented. If they were they would see farms out of cultivation, rents falling, labourers in the deepest distress, villages in ruin, and the country in decadence and poverty. There was not a man in the room that did not know that that was not the true state of things; there was not an agriculturist that he was now addressing who did not know that year by year the breadth of land under cereal crop had increased, the quality of corn improved, and the quantity improved. There was not a man—and the rev. canon had admitted in his writings that the wages of the labourer had gradually and surely risen—there was not a man in the room connected with a Board of Guardians or a Board of Health who did not know that great improvements had been made in the dwellings of the poor, that the sanitary laws passed by a wise Legislature had been in many instances strictly enforced, and he, as a landowner, regretted that they were not more strictly enforced than they had been. It was a patent fact that the condition of the labourer in this county, especially in this vicinity, was one of amelioration and improvement. He might be met by being told that the pauperism of the country was daily and yearly increasing. He admitted that it was a sad fact; but the pauperism arose in the towns, and not in the country districts. He divided paupers into three classes—the agricultural, the urban, and the criminal; and inquired how the poor-law operated on their respective conditions? The principle of the poor-law of 1834 was simply relief from destitution, and, if rigidly carried on, it was a singularly cruel principle to apply to the agricultural poor, because it was seldom that the agricultural labourer was in a thorough state of destitution. These were times when, from illness or otherwise, he needed temporary relief; but the law of 1834 was incapable of relieving him till he had become utterly destitute, and then he must go into the union. The law was therefore useless to the agricultural labourer. As to the urban population, stagnation of trade had thrown large bodies of men out of work. The poor rates had increased from £6,459,515 in 1865-6 to £7,495,061

in 1867-8. This was a frightful increase, and where did the burden of it fall? Why, on the land; for while the annual income of the country was 396 millions, only 94 millions was assessed to the poor rates. The poor-law, then, did not benefit the agricultural labourer on the one hand, while on the other it pressed with peculiar hardship on the landed property of England; nor, he thought, could such a law be defended in any way. With respect to the criminal and vagrant class, the poor-law provided that there should be a labour test; but, practically, writers told them, the test was not applied. He enlarged on the dreadful evils that flowed from the mass of criminal population, and suggested that the younger portion—the "city Arabs"—might be made men of by being assisted to the colonies, where their bone and sinew would be useful. Meanwhile, one result was certain, the poor-rate was increasing to an extent which threatened to overwhelm property.

Mr. WADE, the Chairman, said, with respect to the land question, the position of the tenant in Ireland as to farm buildings and improvements, was different from that of the English tenants, and therefore, he thought there was no ground for the supposition that a tenant-right law in Ireland would be followed by a tenant-right law in England. He thought legislation of this kind between landlord and tenant in England undesirable. Turning to the subject of education, he could not see that practically the Factory Act could be applied to farming; and he had been, and was still, opposed to compulsory education. Still, he confessed that he had been shaken on this latter point by a cogent argument. It was stated very clearly that not more than 5 per cent. of the agricultural population were unable to read or write; but

from that per-centage a large proportion of the criminals of the country were found, and if those were the facts, would it not argue that they ought to get hold of that 5 per cent., and educate them, even by compulsion, if necessary?

Mr. ELIAS CUMMING said that he found that he had paid during his time in business £2,500 in poor's rates, besides the duty of guardian, costing him £10 a-year for many years past. Pauperism would never decrease. Though men got more wages, yet there were excursion-trains, beer-shops, and other ways by which they could spend it. The more wages some of them got, the less they could pay their debts, till now it was common to find many who paid nobody. Too much money was often a cause of drinking, and thereby of pauperism.

Mr. COULTON stated that the Canon had been mistaken as to the rate of wages. He himself paid 12s. a week in winter, and 15s. a week in summer. He was very much pained at the time to see the statements that were put forth, for they were a libel on the agriculturists of the West of England. He maintained that the labourers in the rural districts were better educated than those in the towns.

Mr. ELIAS FORD, invited Canon Girdlestone to accompany him in a visit to some neighbouring villages where he should see and converse with the labourers, and after that visit Torquay and see the labourers in that fashionable town; he would then be able to compare the condition of the two. He could agree with Sir L. Palk in saying that seldom or never was destitution existing amongst the agricultural labourers. At the Guardians' relief table that day they had pages of applications from distressed labourers in Torquay, but few from agricultural labourers.

AGRICULTURAL SOCIETIES AND ARTIFICIAL MANURES.

TO THE EDITOR OF THE SCOTSMAN.

SIR,—At the Christmas meeting of the West-Lothian Agricultural Association, a motion by Mr. Arkley, Philpston, asking the Society to grant a sum of money annually as a retaining fee to a practical analytical chemist, in order that the members of the Society may get a cheap and reliable analysis of all artificial manures, chemicals, or feeding stuffs at a lower rate than is now charged by chemists in individual cases, was submitted for discussion. Other business prevented the subject from being taken up and ventilated, and the motion was referred to the Standing Committee. The committee at its last meeting have thought the subject involved a money difficulty, and have handed it back to the general meeting to be held in the Council Chamber, Linlithgow, on Friday first. The circular calling that meeting has just now been put into my hands, and under the head of business appears a motion, "Whether any funds should be taken from the Society for a blood stallion," or for a draught horse, and "also, to consider the whole question of a chemical analyst."

I understand the committee are not prepared to advise the Society to undertake the responsibility of the latter motion, but I fear they have looked at the subject not as it affects the community or themselves individually, but in their position as guardians of the funds of the Society, and have barely given it that attention which it seems to me to deserve—in fact, I understand some of them think it might lead the Society into trouble. This is a mistake, as it can no more lead a society into litigation than the granting of a £50 premium for the best horse to serve the district can; and the advice and protection of the Association in the question of manures and feeding stuffs is as legitimate a part of the business of an agricultural society as the encouragement given to the breeding of cattle or the improvement of agricultural implements.

The question of analysis of artificial manures is one of growing interest to the farmer, and one which only collective and organized bodies can sufficiently cope with. The Highland Society, through its chemist, Dr. Anderson, have had various lectures on the value of artificial materials for feeding and manures, and which explained their properties. The Haddington Farmers' Club have also had before them similar discussions, particularly the value of artificial feeding-stuffs in the fattening of store stock; and in your Saturday's paper appears a notice of a meeting of the Kelso Club, where Mr.

Burn says "he has no doubt as to artificial food being profitable, and he thought it specially advantageous on poor land where few sheep are kept." But while this is extending their adoption, it is not preventing but rather fostering and encouraging the cases of adulteration so much complained of—and certainly it has enormously increased the demand for artificial stuffs; and in your extract of date 7th, from M'Lean & Hope's report, they say: "There is a continuous active demand for all the ingredients for artificial manures, and also for the manures themselves; and the scarcity of phosphatic guano and other cognate materials is evidenced by the high range of prices and the readiness with which all offers are taken out of the market. Bone cargoes are excessively scarce, and shipments in the spring months from the Baltic and other northern ports are quoted at almost unprecedentedly high figures. The recognized value of the Highland Society and its offshoots, the local societies, as a means of improving whatever affects the interest of agriculture, by the granting of premiums and commendations, has undoubtedly changed the system of farming, and the impetus and interest of late years taken in Christmas shows of fat stock is also compelling the farmer to fall back upon artificial stuffs to a larger extent than ever, and the genuineness of the material supplied now demands attention, and, with many others, I also hold protection. The question is, how is this to be accomplished."

It is well known that the great competition amongst dealers, and the merit of being cheapest, encourage the introduction by dishonest men of adulterating materials; and how often do reports appear of disputes between farmers and merchants as to adulterated guanos, and bad oilcake often filled with the dry worthless "shellen seeds" which the miller used to send down the river, or the introduction for pure bran of that useless refuse, "used bran," the soul and substance of which has been previously extracted by the power-loom manufacturer to make "paste" or "size," afterwards caked and bought by some oilcake-makers to cheapen this otherwise valuable feeding material when genuine.

If a society can give a premium of £40 or £50 for a horse to improve the stock of a district (and some farmers of high intelligence are beginning to think that our splendid Clydesdale is, like the American Indians, being improved off the face of the earth), would the money of the association not be equally well spent in protecting the soil from being robbed, and the

cattle from being defrauded, by means of an analysis of these artificial stuffs, and thereby save the farmer the risk of losing half his crop, and certainly half his money? A case of some interest came under my observation lately. A farmer in this neighbourhood ordered some guano from a most respectable Edinburgh merchant, at £12 10s. per ton. The first Wednesday he was in town afterwards he went and paid the guano. He found on using it, he had bought too little, and sent for another quantity. This was also sown, he leaving certain rigs without any to test its usefulness or influence. Not being in Edinburgh again till the crop was a good way up, he received a note by post of his second purchase. The farmer by this time was getting anxious about the fate of his crop, as there was no perceptible difference between what had got the guano and what had not; but, not resting satisfied with his own judgment, he called in two of his most skilful neighbours and got their opinion. They were equally at a loss to distinguish the difference. He now complained to the merchant, and got him to send a practical man to examine the crop, with the like result as already mentioned. It was so unaccountable that the merchant would not allow any reduction, and threatened legal proceedings. The farmer was unwilling to pay in full, and equally unwilling to go to law, so he caused his men to produce the sacks in which the guano had come to him. He made up a good breakfast-cupful and sent it to Dr. Stevenson Macadam, who analysed it, and sent a report of the value. From this it was proved to be deficient in all the essentials, and valued at £5 15s. With this report in hand, he went to Edinburgh, the merchant being now glad to withdraw his account, the farmer thus saving himself an expensive law-suit and the price of his second purchase—for the analysis he paid one guinea. Now, what I understand by this motion is, to retain and give, say Dr. Stevenson Macadam, or some practical chemist of equal merit, a sum such as the Society can afford—let it be £50 or £100, according to the strength of the Society, and the number of members likely to apply for such analyses—so that they can have this done at the nominal rate of 5s. for each analysis, instead of paying one guinea, as at present—in other words, it is just forming

an assurance against fraud in the sale of these stuffs, without the machinery of a board of directors. And as scores of the members of agricultural societies, farmers included, are not and never will be exhibitors of stock, the protection herein afforded them will be the means of increasing the membership of these bodies.

The details of the working of this plan could be arranged in something like the following:—Say a farmer gives an order for a quantity of guano or any artificial material, which he himself cannot analyse, and of which he has doubts as to its being equal to the recommendation on which he was induced to give the order, let him, either through the secretary of his society, or, to save that official trouble, send himself direct to the chemist named by the society a sample of the material wished to be tested; but, in order to prevent fraud even on the part of the buyer, and to protect the seller, the sample would require to be taken from the bulk of the purchase within a reasonable number of days after delivery, in the presence of two witnesses, signed and sealed by them in a printed paper, which could be furnished by the society of which he is a member. The duties and risks of the society end here, as it has enabled its member to get a correct knowledge of his purchase; and any after-dispute, as to value, is between the purchaser and seller, and with which the society has nothing to do.

I believe this subject was before the Association some years ago, on a motion by Mr. George Davidson, Walton, he basing his motion on the principle of every member paying at the rate of 10s. per £100 of rent. This, however, did not meet with approval, and now, whether the other motion is adopted or not, it contains much that is worth considering. The demand for artificial materials is increasing, and their adulteration is keeping pace with their demand, as evidence the number of complaints made by farmers when they congregate at markets, and sooner or later the motion founded on something like the machinery described in this letter will be necessary for protection in this department.—I am, &c.,

A WEST-LOTHIAN MEMBER.

Linlithgow, Jan. 11.

THE TREDEGAR SHOW.

AT NEWPORT, MONMOUTHSHIRE.

"I do not recollect a Tredegar Show with which I have been more pleased," writes a good judge, who has been for years familiar with the show, and an occasional exhibitor. And it was a good one. The Shorthorns were satisfactory, the Herefords excellent, the Devons few but fair. The sows with litters were a wonderful sight, principally of the native, long, flap-eared sort, which holds its ground among the small farmers notwithstanding the beautiful proportions of fashionable, prick-eared, small, improved breeds. It is true that there is usually a dash of the Berkshire in them, or they have had a cross from the Squire's pig, more to please him than their owners. anyhow, each sow occupied one pen; and an abundant litter of about a dozen or over was such as would make the Suffolk men's teeth water. The fat pigs were good. The winner was a Berkshire, very like Mr. Stewart's sort, but bought as a squeaker for 12s. in Newport market, as the happy winner delightedly related.

The sheep were few but good. A Gloucestershire man, and a considerable breeder, said he had never seen better longwool lambs at any show. There was one exquisite Cotswold ewe in a pen of four of Mr. Spencer's, so broad and level and deep and stylish that she formed the cynosure of many eyes, but she unhappily spoiled by her extraordinary excellence the appearance of the pen, which was otherwise good.

To particularize more respecting the cattle, the yearling Shorthorn bulls were a good class. The winner, a funny-coloured, but level animal, with poor crops however, was the winning bull-calf last year, and is said to have been picked up with his dam in the Gloucester market. He is probably a first-crow, and wants the thorough-bred look of the fashionable herds. Mr. Stratton and his son as usual showed some good animals, particularly a bull-calf with a back like a

billiard-board, roan, well-haired, and full of rich promise. In the best class of the cattle-show, where every competitor was beautiful ("the best yearling heifer" class), we thought Mr. Stratton should have won; his animal had so much more real character than the winner about the head. But you cannot tell until you see them led out, which I did not. In a useful class of fat oxen, Mr. Arkwright showed a capital beast. That gentleman has got material in his hands to galvanize the Hereford breed, so wealthily-fleshed, curly-coated, and refined-looking are his show animals generally. We hope he will steer clear of the thick-hided, wiry-haired ones which some breeders persist in retaining.

Mr. Thomas, of St. Hilary (an annual celebrity), showed some excellent beasts of this breed, his bull taking Mr. Homfray's prize, for the best horned beast in the yard, for which, however, Mr. Tudge's two-year-old heifer, Manchester and Leicester Royal winner as a yearling and calf, ran him hard. She also won as a yearling at the Bath and West of England. Mr. Rogers showed the winners in the Hereford bull-calf and heifer-calf classes. It is curious that his name is omitted in the catalogue. The fat cows were ordinary, Lord Tredegar's winning animal being apparently deformed on one side. For the best pair of cows Mr. Tudge showed a well-ribbed and rich-coated, but small pair. Mr. Keever's beating him was disputed by the public a good deal, until the referee, happening to pass, had them led out anew; after which no more was said. The Hereford yearling steers were good, the two-year-olds poor.

The cart mares were fair, but not such as we have seen there before. The cart stallions were simply monstrous, misshapen beasts. If they could but get the beauty of the improved Suffolk into these great brutes, who have plenty of pluck—but

somehow or other, although two at least Royal winners have been of late years brought into South Wales from the eastern counties, they found no favour with the local farmer. The nag mares were a splendid class, the winner, Brandy, being as superb a mare as we have ever looked over. At a distance she appeared a small, handsome, well-bred, compact, but elastic specimen of the real old hunter class used 30 years since, full of bone, bred out of an active mountain-side mare, by a horse of worth. When, however, you approached her, she stood 16½ hands high. It was her exquisite symmetry made her seem small. We looked her over and over, and positively could see not a single fault. She was distinguished by a beautiful small but broad-fronted head and lustrous gentle eye, flat short legs, excellent back and loins, quarters stylish and powerful, grand withers, an astounding depth of well-rounded barrel, and she was a showy fast mover. Never has our eye rested on a mare more thoroughly good. Why she has never been at the Royal Show I wonder. Her present owner obtained her and a "highly commended" mare in the same class from Mr. Talbot, the master of the Ledbury hounds, who is recorded to have cleverly jumped a well-known brook of dangerous character upon her. This gentleman (then master of the Cowbridge harriers) had in his stable at the same time Topetall, a horse which has won for Major Barlow so much this year. Mr. Williams who owns Brandy now inherits a property which used to be celebrated for mountain ponies, his father being in the habit of using Arab and other sires as Mr. Smith of Exmoor lately did. His son aspires higher, and with success to judge from these mares and his lightweight hunter (also the winner in his class), a lengthy clever animal, far superior to the whole lot against which he competed. There was nothing remarkable amongst the weight-carrying hunters. They were a corky-looking lot, ordinary and rather lightish horses. Brandy would have made them look small. The ponies were a disgraceful collection of spindle-shanked brutes. The cobs a good class. There was a good three-year-old colt for hunting purposes shown, by Llandaff, a brother to Ely, and the trials of hunters took place on the Monday—a very "dirty day" it was. In the class for heavy-weight hunters there were 12 entries, and in the light-weight class 30; but the numbers that came on the ground for trial were reduced to 8 and 14. Col. Morgan took Mr. Cartwright's prize for entire thoroughbred horse with the varmint old screw Harcourt, although Christmas Carol, which ran second to Gladiateur for the Derby, was in the entry.

JUDGES.—For the horned stock, sheep, pigs, cart horses, and implements: W. Yeomans, Stretton Court, Hereford; G. Hitchman, Long Ashton, Bristol; and M. T. S. Winter, The Hartridge, Newport. For the thorough-bred horses and cobs: E. Bowly, Siddington House, Cirencester; Major Probyn, Huntly Manor, Gloucester; Capt. Dighton, Newland, Coleford, Gloucestershire; and H. Higgins, Woolaston Grange, Lydney.

PRIZE LIST.

Horned breeding animal selected from any in the yard.—A piece of plate, value 20 ga., T. Thomas, St. Hilary, Cowbridge, Glamorgan.

Yearling bull, North Devon breed.—Silver cup, Rev. A. Morgan, Machen Rectory, Newport; highly commended, Hon. G. C. Morgan, M.P., Rusperra Castle, Newport.

Two-year-old heifer, North Devon breed.—Silver cup and highly commended, Rev. A. Morgan.

Pair of three-year-old heifers, North Devon breed.—Silver cup, Rev. A. Morgan.

Yearling bull, short-horned breed.—Silver cup, J. Pybus, The Court Farm, Magor, Chepstow; highly commended, Lord Tredegar; commended, Lord Tredegar and Rev. W. H. Beaver, Pencraig Court, Ross, Hereford.

Two-year-old heifer, short-horned breed.—Silver cup, Rev. W. H. Beaver; highly commended, M. Hale, Cold Harbour, Nash, Monmouthshire.

Bull calf, short-horned breed.—Silver cup, J. Till, Caerwent, Chepstow; highly commended, Lord Tredegar and R. Stratton, jun., The Duffryn, Newport; commended, Rev. E. T. Williams, Caldicot Parsonage, Chepstow.

Heifer calf, shorthorned breed.—Silver cup, T. Hewer, Inglesham, Lechlade; highly commended, R. Stratton, sen., Burderop, Swindon; commended, Rev. W. H. Beaver.

Yearling bull, Hereford breed.—Silver cup, T. Ed-

wards, Wintereott, Leominster; highly commended, W. Evans, Llandowias, Uak; commended, W. S. Powell, Eglwynydd, Taibach; and R. Tanner, Frodesley, Dorriington, Salop.

Two-year-old heifer, Hereford breed.—Silver cup, W. Tudge, Adforton, Leintwardine; highly commended, W. S. Powell.

Bull calf, Hereford breed.—Silver cup, J. Morris, Madley, Hereford; highly commended, T. Thomas, St. Hilary, Cowbridge.

Heifer calf, Hereford.—Silver cup, T. Thomas.

Pair of yearling steers.—Silver cup, Lord Tredegar; highly commended, W. Williams, Red House, Ely, Cardiff.

Yearling heifer.—Silver cup, Lord Tredegar; highly commended, R. Stratton, sen., and T. Thomas.

Fat ox.—Silver cup, John Hungerford, Arkwright, Hampton Court, Leominster; highly commended, W. S. Powell.

Fat cow.—Silver cup, Lord Tredegar; highly commended, C. Duckham, Salisbury Farm, Magor, Monmouthshire.

Pair of cows, of any pure breed, in-calf or in-milk.—Silver cup, Rev. W. H. Beaver; highly commended, W. Tudge.

Bull, cow, and offspring, the offspring being under one year old, the cow being in milk, or within three months of calving.—First prize, £10, T. Thomas; second, £5, T. Edwards, Llanarth, Raglan, Monmouthshire; highly commended, W. Jones, Cefnlogell, Castletown, Cardiff.

Pair of breeding cows, in milk or within three months of calving.—W. S. Powell; commended, W. Evans, Llandowias, Uak, Monmouthshire.

Pair of two years old steers, £10, W. Harris, Llansoar, Caerleon.

Pair yearling steers, £5, W. Williams; highly commended, T. Dowle, Ifon, Chepstow; commended, W. Evans.

Pair of in-calf heifers, under three years old, £10, W. Evans.

Pair of yearling stock heifers, £5, R. Stratton, jun.; highly commended, W. S. Powell.

Ram lamb, long wool, silver cup, T. Thomas; highly commended, T. Thomas.

Four shearing ewes, long wool, £5, J. Williams, Caerady, Cowbridge, Glamorgan; highly commended, C. Spencer, Gileston, Cowbridge; commended, R. Leyshon, Island Farm, Bridgend.

Ram lamb, short wool, silver cup, G. Wallis, Old Shiford, Bampton, Farringford; highly commended, G. Wallis.

Four shearing ewes, short wool, £5, G. Wallis; highly commended, R. Tanner.

Pen of four breeding ewes and one ram, of Welsh-mountain breed, six guineas; J. Stephens, Sheep-house, Hay, Brecon; highly commended, R. Rees, Coldbrook-cottage, Abergavenny.

Pen of five wether lambs, long wool, £5, T. Thomas; highly commended, T. Thomas.

Pen of five ewe lambs, long wool, £5, C. Spencer; highly T. Thomas, and J. Williams.

Pen of five yearling stock ewes, long wool, £5, T. Thomas.

Pen of five breeding ewes, long wool, £5, J. Williams; highly commended, T. Thomas.

Boar.—Silver cup, R. Keene, Pill House, Tidenham, Gloucestershire; commended, J. Wheeler, Long Compton, Shipton-on-Stour, and J. Seys, The Craig, Newport.

Fat pig.—Silver cup, H. Workman, Coodkernew, Cardiff; highly commended, F. Jones, Castletown, Cardiff.

Boar and sow, under a year old.—Silver cup, H. Workman, Coodkernew, Cardiff; highly commended, Hon. F. C. Morgan, Rusperra Castle, Newport; commended, C. Homfray, Glan Uak, Caerleon, Monmouthshire.

Breeding sow, with litter of pigs.—Prize, £5, H. Hale, Troston Farm, Christchurch, Newport; highly commended, J. Seys; commended, J. Till, Caerwent, Monmouthshire.

EXTRA STOCK.—Highly commended, J. Wheeler.

Yearling cart colt or filly.—Silver cup, J. Williams, Llan Farm, Brecon; commended, A. Watts, Coity, Bridgend.

Cart mare and foal.—Silver cup, C. Coleman, Uak; commended, H. Williams, Llandenny, Uak.

Cart stallion, that has covered in the county of Monmouth in 1869.—Prize, W. Dukes, Groomont Wood, Hereford.

Nag mare for general purposes, in foal to, or with colt by her side, by a thorough-bred horse.—Silver cup, M. S. Williams, Aberpergwm, Neath, Glamorgan; highly commended,

W. Powell, M.P., Temple Stroud, Blackwood, Monmouthshire, and M. S. Williams.

Pony, under four years old.—Silver cup, J. Thomas, Arcade Wine Vaults, Cardiff; highly commended, J. Williams.

Cob or galloway.—Prize, W. Allen, Vaindra Hall, Cardiff. Highly commended, H. Elkington, Pembrey, Carmarthenshire; W. Thomas, Marroosa, Bridgend, Glamorganshire; and T. Evans, Market Street, Newport, Monmouthshire. Commended, R. Allen, Ty-to-Main, St. Melons, Cardiff.

Yearling colt or filly, for hunting purposes.—Silver cup, Messrs. L. and H. Thomas, Tydraw, Cowbridge.

Three-year-old colt or filly, for hunting purposes.—Silver cup, C. Spencer, Gileston, Cowbridge; highly commended, J. Williams; commended, J. L. Monfries, Pwly Pant, Caerphilly.

HUNTERS' PRIZES.

Weight-carrying hunter.—First prize, £20, J. Pybus; second of £10, C. Phillips, William IV., Newport, Monmouthshire. Highly commended, C. H. Williams, Roath Court, Cardiff.

Light-weight hunter.—First prize, £20, M. S. Williams; second of £10, J. L. Monfries. Highly commended, C. H. Williams; commended, Hon. F. C. Morgan, and J. Stratton, Chilcomb, Winchester.

Thoroughbred entire colt or stallion.—Silver cup, Hon. G. C. Morgan, M.P.; highly commended, T. F. Price, Newton Lodge, Monmouth.

HORSHAM FAT STOCK SHOW.

There was a very successful exhibition here.

LIST OF PRIZES.

BEASTS.

Fat ox or steer three years old and upwards.—First prize £7, L. Steer; second, £4, T. Child; third, £3, J. Napper.

Best steer under three years of age.—First prize, £6, J. Agate; second, £3, W. M. Stanford.

Best cow.—First prize, £5, J. Agate; second, £3 10s, W. M. Stanford.

Best heifer under four years of age.—First prize, £5, L. Steere; second, £3 10s., W. Sturt.

Best heifer under three years of age.—First prize, £5, W. Sturt; second, £2 10s., A. Agate; third, £1, H. Batchelor.

SHEEP.

Best pen of three wether sheep.—First prize, £6 Messrs. E. and A. Stanford; second, £3, A. Agate; third, £2, J. Napper.

Best pen of three ewes, that shall each have reared a lamb during the present year.—First prize, £4, E. Churchman; second, £2, Rev. J. Goring.

PIGS.

Best fat hog of any age.—First prize, £4, E. Churchman; second, £2, W. M. Stanford.

Best three fat hogs under twelve months of age.—First prize, £4, H. Hamming; second, £3, Rev. J. O. McCarogher.

EXTRA PRIZES.

BEASTS.

£3 10s. for the best beast shown as extra stock; W. Wood, (Ifield Court); second, £1 10s., R. Pronger.

A silver cup for the best beast, L. Steere.

A silver cup for the best beast of pure Sussex breed, L. Steere.

A piece of plate, of the value of £5, for the best beast shown, W. M. Stanford.

A piece of plate, of the value of £5 5s., to a tenant farmer, and best fat steer or heifer under three years of age; H. Batchelor.

SHEEP.

A piece of plate for the best pen of sheep shown in any class, Messrs. E. and A. Stanford.

PIGS.

£1 for the best hog shown, E. Churchman.

GUILDFORD CATTLE SHOW.

The annual show in connection with the Guildford Agricultural Association, was held at Guildford. The meeting was certainly the best in point of excellence, as well as the largest, which has ever taken place here. Among the fat beasts, the Devon exhibited by Mr. Hugh Sears was a capital beast, as was Mr. Smith's steer which took the second prize. There was a dinner, at which Mr. Bradshaw, of Knoles, presided. Subjoined is the

LIST OF PRIZES.

FAT PRIZES.

Fat ox or steer, not exceeding four years of age.—First prize, £5 5s., H. Sears; second, W. S. Smith; third, H. Sears.

Fat steer, not exceeding three years.—First prize, £5 5s., L. Steere; second, R. Beale; third, H. Daws.

Maiden heifer, under four years of age.—First prize, £5 5s., L. Steere; second, J. Hooker.

Maiden heifer, under three years of age.—First prize, £5 5s., G. Cubitt, M.P.; second, W. Sturt; third, W. Wells.

Shorthorn steer, under four years.—First prize, £5 5s., Mr. Roker; second and third, R. Channell.

Fat cow with a live calf.—First prize, £3, R. Channell; second, M. Marshall.

EXTRA PRIZES.

Best fat ox, steer, or maiden heifer, in either of the above classes, a piece of plate, L. Steere.

Best fat beast in either of the foregoing classes, £5 5s., L. Steere.

Best fat heifer or steer of any age, fatted and exhibited by a tenant farmer of less than 150 acres, £3, H. Daws.

FAT SHEEP.

Pen of three Down wether sheep, under two years of age.—First prize, £5 5s., J. C. Ramsden; second, G. Cubitt, M.P.; third, M. Marshall.

Pen of three maiden ewes of any breed, under two years of age.—Prize, M. Marshall.

FAT PIGS.

Pen of three fat pigs, under twelve months old.—First prize £5 5s., W. Wells; second, M. Marshall.

Pen of three fat pigs, under nine months old.—First prize, £3 5s., M. Marshall; second, M. Marshall.

LEAN STOCK.—BEASTS.

Best bred bull under two years of age.—First prize, £5 5s., L. A. Cousmaker; second, G. Holland; third, M. Marshall.

Best bred bull calf, not less than six months and not exceeding twelve months old.—First prize, £3, L. A. Cousmaker; second, G. Holland.

Best cow and offspring of the present year.—Prize, L. A. Cousmaker.

Best heifer under three years of age, in calf or with a calf.—Prize, L. A. Cousmaker.

Best heifer under two years.—First prize, £3, H. Sears; second, L. A. Cousmaker.

EXTRA PRIZE.

Best bull calf.—Prize, G. Hollands.

STORE SHEEP.

Best pen of ten pure-bred ewe lambs, under twelve months old.—Prize, M. Marshall.

Best pure bred ram lamb, under twelve months old.—Prize, G. Cubitt, M.P.

STORE PIGS.

Best boar, not exceeding twelve months old.—Prize, W. Drewitt.

Breeding sow in pig (or with her pigs), and which shall have had one litter or more.—First prize, £3, W. Wells; second, J. C. Ramsden.

MANGOLD WURTZEL.

Nine roots of long mangold wurtzel.—First prize, £2, T. Drewitt and Son; second, W. Drewitt; third, M. King.

Nine roots of globe wurtzel.—First prize, £2, W. Drewitt; second, G. Holland; third, L. A. Cousmaker. Highly commended: G. H. Pinkard.

SWEDES AND TURNIPS.

Nine roots of swede turnips.—First prize, £3, W. Drewitt; second, M. Marshall; third, J. Franks.

Nine roots of white-fleshed turnips.—First prize, £3, L. A. Cousmaker; second, L. Hilder; third, M. Marshall.

WEST OF ENGLAND FAT CATTLE SHOW.

This Show was held at Plymouth under unfavourable auspices, the weather being very wet and stormy, which much affected the attendance. There was, however, a large show of stock.

The Judges for cattle, sheep, and pigs were—J. Bult, Kingston, Dorset, Somerset; W. Paige, St. Germans; A. Parson, Highweek, Blacktorrington.

PRIZE LIST.

NORTH DEVONS.

Steers not exceeding three years and three months old.—First prize, £10, W. Farthing, Stowey Court, Bridgwater; second, W. Smith, Hoopers, Exeter.

Oxen or steers exceeding three years and three months old.—First and second prize, W. Farthing.

Cows and heifers of any age.—First prize, R. Burton, Place Barton, Broadclay; second, J. Russell, Town House, Gittisham, Honiton.

SOUTH DEVONS.

Steers not exceeding three years and three months old.—First prize, W. Coaker, Charleton Court, Kingsbridge; second, S. Huxham.

Oxen or steers exceeding three years and three months old.—First, W. Coaker; second, J. M. Toma, Coyton, Ivybridge.

Cows or heifers of any age.—J. Drew Articombe, Tavistock; second, J. Drew.

SHORTHORNS.

Steers not exceeding three years three months old.—Second prize, R. Tremain, of Trethurffe, Graupound-road.

Oxen or steers exceeding three years three months old.—Prize, J. Horswell, Burn Hall, Lew Down, Exeter.

Cows or heifers of any age.—First prize, W. Drew, Plymouth; second, E. Elliott, Landulph, Cornwall.

HEREFORDS.

Oxen or steers exceeding three years three months old.—First prize, W. R. Grose, Penpont, Wadebridge; second, G. and W. E. Lobb, Lawhitton, Launceston.

Cows or heifers of any age.—First prize, J. W. James, Mappowder Court, Blandford; second, W. R. Grose.

CROSS BREEDS.

Oxen or steers of any age.—Prize, J. Jackman, Meadwell Kelly, Tavistock.

SHEEP.

Pen of three Leicester wethers under 23 months old.—First prize, R. Nicholls, Lostwithiel, Cornwall; second, R. Nicholls.

Pen of three wethers of any other long-woolled breed, not being Leicesters, under 23 months old.—First prize, R. C. Clark, Barne Barton, St. Budeaux, Plymouth; second, R. C. Clark.

Pen of three Down wethers under 23 months old.—First prize, S. Hyne, Stonehouse; second, S. Hyne.

Pen of three Exmoor wethers of any age.—Prize, W. Smith, Hoopers, Exeter.

Pen of three Dartmoor wethers of any age.—First prize, J. Drew, Articombe, Tavistock; second, J. Drew.

Pen of three ewes of any age or breed.—First prize, T. Potter, Yellowford, Thorverton, Cullompton; second, R. Nicholls.

PIGS.

Pen of two pigs under nine months old.—First prize, E. Trood, Bowhay, Exminster; second, J. S. Davey, Redruth.

Fat pig of any age.—Prize, W. F. Collier, Woodtown Horrabridge.

LEWES FAT STOCK SHOW.

The class for oxen has always been a good feature in the Lewes Show, and there were here six exhibited. There would have been more, not only in this class but in some of the others, had the entries of Mr. Tylden Smith, of Beckley, arrived. The best ox was unquestionably that of Mr. Pennington Gorringe, of Pebsham, Bezhill, and it was of course awarded the first prize. Some fine beasts were shown as extra stock, and the market was well supplied with fat cattle.

The show of sheep and pigs was not so good as of beasts. The judges were Edward Cane, of Berwick Court; F. Tuppes, Priesthwaite, Westham; and Richard Broad, of Hurstpier-point. Their awards were:

Ox, five years old or upwards.—First prize, £8, P. Gorringe, Pebsham, Bezhill; second W. Mannington, Isfield.

Ox or steer, not exceeding four years old.—First prize, £8, Right Hon. H. Brand, M.P., Glynde-place; second, W. Taylor, Glynde, Westham.

Steer, not exceeding three years old.—First prize, the silver cup, value £10 (being the best beast in the show), W. Botting, Westmeston-place; second, J. Shoomsmith, Berwick.

Cow, four years old and upwards.—First prize, £8, J. Shoomsmith; second, W. Botting.

Open heifer, under four years old.—First prize, £5, E. and A. Stanford, Katons, Steyning; second, J. Russell, Hastock's Gate.

Pen of five Southdown wethers, under two years old.—First prize, £7, J. Walker, Firie; second, E. and A. Stanford.

Pen of three fat pigs, under twelvemonth old.—Prize, £3, T. Cooper, Bishoptone.

THE WEST HERTS CHRISTMAS SHOW.

This show, held at Watford, was on the whole very good in quality, and the number of cattle, sheep, and pigs was about equal to that of last year.

The judges were—for stock, G. Garne, Churchill Heath, Chipping Norton, Oxon; R. E. Horne, Waxwell, Pinner; R. J. Newton, Campfield Farm, Woodstock, Oxen. The prizes were as follows:

CATTLE.

Shorthorn oxen or steer, not exceeding three years old.—First prize, Mrs. W. Morten, Lea Farm, Watford; second, the Earl of Clarendon, K.G., The Grove, Watford.

Shorthorn ox or steer, three years old and upwards.—First and second prizes, Thomas Leach, Longcroft, Bovingdon, Hemel Hempstead.

Shorthorn heifer, not exceeding three years old.—First prize, the Earl of Clarendon; second, W. Jones Loyd, Langlebury, Watford.

Shorthorn cow, above three years old.—First prize, G. Stone, Cassio Bridge Farm, Watford; second, H. F. Hill, New Hall, Watford.

Ox or steer, of any breed or age (not Shorthorn).—Prize, J. Furrott, The Wood, St. Alban's.

Fat heifer, of any breed or age (not Shorthorn).—First prize, C. Waghorn, Nether Wyke Farm, St. Alban's; second, Lord Cheam.

EXTRA PRIZES.

Ox or steer of any breed, not exceeding three years old.—Prize, £10 10s., Mrs. W. Morten, Lea Farm, Watford.

Ox or steer of any age or breed, exhibited in any of the classes by a tenant-farmer residing in Herts.—Prize, £10 10s., T. Leach, Longcroft, Bovingdon, Hemel Hempstead.

Cow or heifer of any breed or age exhibited in any of the classes, bred by a tenant-farmer residing in Herts.—Prize, £10 10s., J. White, Parsonage Farm, Rickmansworth.

The best animal exhibited by a tenant-farmer residing within a radius of 15 miles of Watford.—Prize, 20 guineas, G. Stone.

SHEEP.

Cross-bred or longwool fat wether, one year old.—First prize, C. Longman, Shendish, Hemel Hempstead; second, J. White.

Fat wether, of the Southdown breed, one year old.—First prize, W. Jones Loyd; second, the Earl of Essex.

Hampshire, or other short-woolled wether sheep not Southdowns, one year old.—First prize, James White, Apple-tree Farm, Rickmansworth; second, Jones W. Lloyd.

Fat wether sheep of the Shropshire breed, one year old.—First and second prizes, Lord Cheam.

Fat long-wool sheep (ewe or wether) of any breed or age.—Prize, Charles Longman.

Fat short-wool sheep (ewe or wether) of any breed or age.—Prize, Lord Cheam.

£10 10s. for the best pen of sheep in the show, exhibited by a tenant-farmer.—Charles Longman.

£10 10s. to the breeder of the best pen of sheep in the show, he being a tenant-farmer.—Charles Longman.

PIGS.

Three pork pigs of any breed, not exceeding sixteen weeks old.—Prize, W. Jones Loyd.

Three fat pigs of any breed, not exceeding nine months

old.—First prize, W. Jones Loyd; second, the Earl of Essex. Three fat pigs of any breed, not exceeding fifteen months old.—Prize, John White.

Fat pig of any breed or age.—Prize, W. Jones Loyd.

25 5s. for best pen of pigs in the show, exhibited by a tenant-farmer.—Prize, John White.

CARR'S ANNUAL HARVEST REPORT.

ROSTOCK AND DANZIC, 31st DECEMBER, 1869.—

Regarding the PAST, we regret to say it has been "flat, stale, and unprofitable" to all concerned in the trade in general at home and abroad, prices having gone on gradually dropping from the top price, ruling in the month of June, 1868, about 40 per cent., and are now below the standard at which they ruled some three years ago, ere the rise took place, wheat being now considerably below its value to other cereals, owing to the continued large arrivals from abroad, which must have inflicted severe losses on the shippers or receivers, or perhaps on both; in fact, shipments were continually made, though a loss of several shillings per quarter was staring the parties in the face whilst shipping. The calculations of the trade for the campaign of 1867 and 1868 were baffled by the six weeks' earlier harvest than usual, and this campaign (1868 and 1869) they have been baffled by the unexpected enormous supplies. The British farmers are to be pitied, as they have been, and are still keeping back their produce in the hopes of better prices, as they cannot reconcile themselves to any other idea but that with short crops at home prices must improve, whereas it is more than probable (as many well-informed people say must take place) that they will have to bring it to market without reference to price. Be this as it may, we pity the poor fellows, and repeat the advice we gave them when Free-trade became the law of the land (in Great Britain), namely, "To grow less grain for human food (particularly wheat), and turn their attention chiefly to cattle-breeding and the production of feeding-stuffs, as they cannot compete with the foreigner in the produce of wheat;" whilst they must fear no foreign competition, at least none of great importance, for this simple reason, the cost, and still more, the sea risk being too great.

PRESENT.—The trade remains in an unsatisfactory state, owing to supplies being considerably more than what the consumption can at present digest. The mild weather has, more or less, also to do with the present stagnant position. Frost would give it a lift, as frost not only stops further shipments, but also strengthens the nerves and hopes of holders, increases the appetites of consumers, and invigorates the body and mind of buyers. It is true that stocks are not moderate; on the other hand, they are not so enormously large as many consider them to be—were they but proportionately spread over the whole of the United Kingdom, instead of their being hoarded up in a few of the leading ports (principally Liverpool and London), they would be considered light. When the sliding scale (the old Corn Law) was in vogue, and when the United Kingdom imported yearly only 8 to 4 million quarters of wheat, a stock of 1 to 2 million quarters was then thought nothing of, whereas now-a-days, when 8 to 10 million quarters are required, a stock of 1½ million quarters is considered large, and this is chiefly caused by said stocks not only being in a few ports, but because they are held by first hands (the importers or consignees); this fact, however unfavourable it may now operate on the purse and nerves of present holders, is the

surest safeguard that there is more certainty of the trade sooner or later mending, than if the stocks were in the hands of millers, flour dealers, bakers, and consumers, it being well known that said parties have for many months past held, and still continue to hold, next to no stocks, which is generally the case with them in falling markets, and still more so at this time of year. So much is certain, prices have fallen 40 per cent. from the top prices paid in June, 1868, and that they cannot fall another 40, nor not the fourth of that, and that it only requires a slight speculative demand and a week or two of firm markets, with but a slight upward tendency, to change the scene from one of apathy to one of animation; and we feel satisfied that this is just the time to try the truthfulness of the adage of an old and much respected London corn factor (we mean the late John Ashlin, Esq.), who, as he left a deal of money, must have felt the glittering force of this mode of doing business, viz.: To buy dear and sell cheap and make money," that is, to buy and sell when others *think* you are wrong and an ass for doing so; in both cases you have the market to yourself and buy and sell accordingly that to advantage. At present everyone is anxious to sell, *ergo*, now is the time to make a bargain, as it appears to us that it is not so much the fear of a further fall, but the want of suitable store accommodation, that is making importers on own account, or the receivers of consignments, to knock off their stuffs at prices which will most probably not nett the shipper (particularly the American) the cost of production to the growers. Large as have been the arrivals, they have not much exceeded what we estimate must be the monthly imports into the United Kingdom, to meet the requirements of the population therein, as, by referring to our N.B. you will find that we put down the requirements for this campaign (from the 30th August, 1868, till the 1st September, 1869), at 11 million quarters of wheat and flour, which is tantamount to 916,666 quarters per month, *ergo*, four months ending 31st this month (December) 3,666,666 quarter wheat and flour. The quantity of wheat afloat to direct and indirect ports, barring what is afloat per steamer, according to Mr. Dornbusch' list of the 18th instant, amounted to 454, against 367 cargoes same time last year, *ergo*, only 77 cargoes, or about 200,000 quarters more of wheat, which is a mere nothing when one compares the last year's excellent crop in every respect to the present year's growth, which is deficient both in yield, weight, colour, and condition, and this not only applies to wheat, but to oats, beans, and peas; and further, potatoes are not quite as they ought to be, being more or less diseased, particularly in Ireland.

AS TO THE PROBABLE FUTURE.—What we have above-stated applies more or less thereto. On referring to our N.B.'s under the various countries, you will find, that Great Britain and Ireland will require foreign aid to the extent of 11 million quarters of wheat and flour, provided the harvest of 1870 takes place as in average seasons, and nothing occurs to postpone it any length of time. Further, that the Mediterranean districts, particularly Portugal and Spain, will compete with Great Britain to

about the same extent as last campaign, also Belgium, Holland, and Switzerland will require at least their usual annual assistance. France, will remain about neutral; what she imports of wheat, she will, as usual, re-export in flour. Further, it will be seen, that the British Lion's providers, will have again to be North America, California, and Chili, which we have put down as being able to spare 8 million qrs. wheat and flour; Russia, $1\frac{1}{2}$ ditto; Germany, $1\frac{1}{2}$ ditto; Austria and her provinces, $\frac{1}{2}$ ditto; the Turkish dominions and Danubian principalities, 700,000 qrs.; Egypt, 250,000 qrs.; Denmark, 250,000 qrs.; total, 7,700,000 qrs. wheat and flour, leaving 8,800,000 qrs. wheat and flour to be made up by economy, which we fancy will be rather a difficult matter to enforce, for this simple reason, low prices generally produce the reverse of economy, namely, "wilful waste, which too often ends in woeful want, and consumers won't eat bread made from rye, barley, peas, maize, or oatmeal so long as they can get wheaten flour cheap; with low prices, not only do human beings take their fill, but all kinds of animals and fowls come on for more than their share, and thus we fear that when prices have risen to a pitch to cause consumers to pull up it will be too late. As stated in our remarks on the present, the low prices ruling just now are caused by stocks being, as it were, all huddled up at a few of the leading ports, instead of being proportionately spread over the whole of England, Ireland, and Scotland; so soon as a depletion takes place, we expect a reaction for the better. Were we the owners of grain cargoes at ports of call, we would most assuredly prefer ordering them to any good port, where we could have our property properly stored in airy, dry, and safest stores, rather than have the same landed in insecure wooden sheds. Better far pay afterwards a couple of shillings extra freight and charges (if obliged later on to re-ship for sale) than risk having one's property either totally spoiled or perhaps pilfered. With the exception of London, Liverpool, Hull, Glasgow, and perhaps Leith, we fancy there are warehouses enough to be got at moderate rates; if not in Great Britain and Ireland, the French and Belgians, and also the Dutch, will, we think, gladly accommodate grain holders, as the said countries don't appear to be overburdened with foreign or home supplies, as they are our best customers—that is, they are paying the best prices, and are buyers, particularly the Belgians; but, we repeat, we are certain there is room for more than double the quantity if properly spread over the United Kingdom; and we are convinced that those who store and look on awhile won't go far wrong; and we hear that many holders are storing, and intend waiting what the chapter of accidents, between this and summer, may bring forth. We do not expect to see great fluctuations during the winter, should there be normal weather, and nothing occurs in politics to cause the probability of an European war (of which, fortunately, there is no prospect), which, or course, would send up prices in a jiffy. On the other hand, we are of opinion that prices will go up so much as will suffice to pay the expenses of those who land the grain, instead of selling at present low rates. In spring a pause will take place, as usual at the said time of the year, provided always that the weather continues favourable, and mankind in general are at peace with each other, it being customary for sellers, but still more for buyers, to act on the reserve, in order to see what the Baltic may send off per first open weather, and they (especially the buyers) generally continue in this passive position till they see what the United States are likely to ship; but during the summer and early part of the autumn we most assuredly (even under the most favourable auspices or circumstances and prospects for the coming crops) expect a smartish rise, which will increase in intensity should

anything occur to endanger the growing crops. Prices being low, cannot well go much, if anything, lower; but, owing to their low standard, there is plenty of scope for a smart reaction upwards.

THOMAS CARR & Co.
HOFFMANN, CARR & Co.

ENGLAND.—Excellent autumnal seed time, and a somewhat larger breadth than usual sown, but owing to wet weather less (in fact for a series of years there has not been so little) spring wheat sown and more spring corn in its place, as such paid better than wheat. The winter was mild, the thermometer ranging a great portion of the time about 60 degrees Fahrenheit; and in the middle of February vegetation was very forward, many spring flowers being in bloom, and the cereal plants presented a very luxuriant appearance, strong in the stem and vigorous in blade; from that time till the beginning of April vegetation made no progress, but rather went back, but some hot weather in April gave it a start, so that in the early part or about the middle of May wheat promised to yield in every respect equal to that of 1868; from that time the weather changed, became cold and wintry, with some slight frost at night, and continued so until about the 27th June, when we had the first appearance of summer. Hardly can be remembered such a cold June; the month was characterized from beginning till nearly its end by an unusually low temperature, an absence of sun, and frequent showers of snow, and intensely cold biting winds; the wheat at that time was coming into ear (some of it was in bloom), so that it passed through that critical stage under most adverse circumstances, the cold weather had the effect of keeping it back; seldom has it been known to be so long a time in coming out; all this, in ordinary season, would have awakened fears of bread famine, but this cold weather was so far fortunate that had the plant been more forward much greater damage must have been done, though, of course, there is no doubt whatever but that the damage done by the cold weather, end of May and in June, was very great. Had it not been so, there is no doubt there would have been the largest crop on record, there being enough straw on the ground for a crop and a half. From the beginning of July the weather was all that could be desired, except, perhaps, that it was a little too forcing; crops matured so rapidly that several fields of oats and barley were cut about the 21st July. On the whole this harvest has been carried equal to ordinary seasons, and about three weeks later than that of 1868, and well harvested. The counties most favoured are Essex, Suffolk, Kent, Devonshire, Berkshire, and Somersetshire. The worst crops have been grown in Yorkshire, Lincolnshire, Norfolk, Cambridgeshire, Northamptonshire, Northumberland, and Gloucestershire; the Midland Counties and the Fens in particular having suffered most from storms and inclement weather. The quality, although there are many complaints that the wheat works weak (no doubt owing to the absence of sunshine, which produces grain more or less deficient of gluten and lessens its bread-making properties), in general considered an average, though here and there blight, rust, and smut (the latter in some districts has not been so prevalent since 1862, white wheat in particular); weight on the average 60 lbs. to 62 lbs., which is about an average weight, though 2 lbs. lighter than in 1868. On the whole the wheat crop is considered 10 to 15 per cent. below an average, or 25 to 30 per cent. under that of 1868. In Wales crops satisfactory in quantity and quality. Barley, a large breadth sown, quantity over average, but the quality considerably below last year's, which was unprecedented, being a bright straw colour, mellow, regular in size, and very heavy in weight, this year it is more steele, irregular in size and colour. Oats, larger breadth sown, yield not so good as expected, varying greatly in quantity and quality, the hot weather which set in in July did harm to the growth. On the whole a very moderate crop. Peas, larger breadth planted, owing to the misplant in clover, suffered from insects, particularly in the Midland Counties, premature ripening, in many districts a failure; in other respects peas are bulky, but not podded in proportion to their stem. Beans, winter sown, average, but spring bad crop. Potatoes, more soil planted, yield tolerably satisfactory, quality and flavour on the whole good. Turnips and mangolds various, suffered from drought, particularly in Yorkshire, on the whole not full average. Hay, large and fine crop, sel-

less better. Pastures yield very largely. On the whole feeding stuffs seldom have been more satisfactory.

SCOTLAND.—Usual breadth of land sown with autumn but less spring wheat; both grades were got well in, the early wheat suffered in many instances somewhat from fly. The summer was fine. In June some storms and wet, together with frost at night. The strong gales early in July in many situations did more or less injury, chiefly to the white wheats. Harvest commenced middle of August and progressed favourably for about three weeks, during which time a deal of the crops were secured in fine order; but in the first or second week of September the weather became unsettled, and the corn still exposed, suffered in colour, but the rain was of great benefit to the pastures and root crops. The bulk of wheat straw is good, but the ear not developed. Wheat may be called nearly an average, though about 90 per cent. below that of last year; quality and condition various: where secured before the unsettled weather, is good; but a deal, housed during the inclement weather in September, will have to remain a few months in stack ere it can come out a useful sample. The best weighs 64 to 66lbs., others 58 to 61lbs. Barley covered more than usual breadth of land, with full average quantity of grain, though deficient of last year. In the best lands the quality is remarkably fine, mellow, and plump, and will malt well; finest chevalier weighing 58lbs., fine quality 56lbs., and the lower grades from 51 to 54lbs.; condition good generally, though in the late districts a good deal carried in middling order. On the whole, barley is the crop of the season; bulk of straw fine, and it cuts up well. On the other hand, Oats are the worst crop of the season, less breadth sown, and varies much in quantity. In some districts it is a full crop, in others very poor, and in some even not worth cutting. Many stacks heated by rain, owing to their being badly covered; many have been pulled down and rebuilt: of course in such cases the colour is bad, though in some favoured districts the quality is fine; weight 44 to 46lbs., generally runs 42 to 43lbs., and lower grades 38 to 39lbs.; early saved, good condition. Beans and peas less than usual breadth planted; suffered from strong gales in July, though tolerably bulky in straw, and some of them pretty well podded, but on the whole defective, and below an average. Hay tolerably good crop, and secured in the finest condition, particularly the first cut; the second cut not so good, being checked by dry weather. Potatoes, usual breadth of land planted; about an average produce per acre, though smaller-sized, as usual, but quality is good. Turnips, early sown, much cut up by the green fly and cold nights, and some of the fields re-sown with rapeseed; the later sown (of which the bulk consists) have done well; on the whole, the crop may be taken as seven-eighths of an average.

IRELAND.—About 4,033 acres less land sown with wheat, which was got in under favourable circumstances, and in fine condition, in autumn as well as in spring. Generally, the plant stood through the winter well, it being mild and open, but in spring the plant received a check, owing to the cold weather, and on the whole the harvest was a late one. The early carrying is of fine quality and condition; the late cut is improving in stacks: on the whole, the yield is about 15 or 20 per cent. below an average, the midland counties having fared worst. Barley, much larger breadth sown, and the best crop of the season, being fully equal to that of last year. Oats, 16,867 acres less land sown; yield in quantity and quality very deficient condition; middling weight 54lbs. Peas and beans, 3 acres less sown; yield in general under average. Potatoes, 7,156 acres more planted; short of an average, generally middle-sized, quality good, and mostly free of disease. Turnips, 1,786 acres more; and 2,018 acres more land planted with mangold and beetroot; yield under average. Meadow and clover, 23,335 acres less; suffered from drought and frost, and yield deficient. Flax, better crop than expected.

N.B.—Last year there was but one opinion as to the result of the harvest of 1898; this year, variety in the yield and quality, and difference in weight and condition being the predominating feature. This apparently operates upon the mind, and causes much diversity of opinion as to the yield of 1899. Taking everything into consideration, we think we are not going far wrong in putting down the yield of wheat in Great Britain and Ireland as 4th below an average, and that, owing to diversity of quality, weight, and condition, fine wheat will be proportionately wanted; and that, in order to meet the requirements of the population and seed,

an importation of equal to (in round numbers) eleven million quarters of foreign wheat and flour will be required, namely, we make our calculation as follows: we go by McCulloch's calculation, and put down the average produce of the United Kingdom at 19,600,000 qrs. Deduct one-eighth for estimated deficiency..... 2,250,000 „

Makes the yield of 1899 15,750,000 qrs.

According to the last census (1861), the population of England and Wales were 20,068,234, added to this number 1,806,287 for increase since 1861, at the rate of one per cent. per annum, brings up the number to 21,871,521; then comes Scotland (as per census of 1861), with 3,068,394, and Ireland with 5,798,987, making in all 30,633,783, without taking into consideration the inhabitants of the Channel Islands. The consumption of the United Kingdom we take as follows:—

England, 21,871,521 of people consume 1 qr. of wheat per head.....	Qrs. 21,871,521
Scotland, 3,068,394 of people $\frac{1}{2}$ qr. per head, to be made up by oatmeal.....	2,256,720
Ireland, 5,798,987 of people $\frac{1}{2}$ qr. per head, to be made up by potatoes, maize, &c.	1,449,743
Add to this for quantity required for seed, which, according to McCulloch, is one-sixth produce ...	3,000,000
	28,417,983
Deduct from this the probable stocks of old wheat in the hands of the farmers and trade general, on the 1st September, at the outside, and in round numbers	1,500,000

From which deduct the yield 1899 15,750,000

Have to be imported from abroad wheat and flour 11,167,983 Last campaign, that is from the 1st August, 1898, until the 31st August, 1899, both included, the quantity imported was 30,110,164 cwts. wheat, and 4,266,127 cwts. flour. Reducing flour to wheat, and wheat to quarters of 500 lbs. each, the importation of wheat and flour amounted to 7,980,713 quarters. Last year the yield was large in every respect, say about 15 per cent. (or equal to 2,700,000 quarters) above an average, this year it is nearly as much under an average, and the consumption, owing to the prices being about 26 per cent. lower than last year at this time (Mr. Caird, in his ably concocted pamphlet laid before the Statistical Society of the 16th March, states "that every 10 per cent. additional price in the crop diminishes the consumption one per cent., and as bread has risen 60 per cent., I reckon a saving at 6 per cent., or a little over one million quarters on the total consumption"), will have increased 24 per cent., equal to about 500,000 quarters.

FRANCE.—The usual breadth of land sown with the various cereals, which were got well into the soil, both in the autumn and spring. The crops promised well up to the end of February, but rain in March, and partly so in April, with frost and rains, accompanied by thunderstorms in June, did harm to the young plants, destroying the early bloom, &c., whereupon the hot weather during the month of July and part of August forced the crops too rapidly forward, so that in many cases premature ripening is complained of, also mildew and smut is more or less prevalent. The wheat crop is worst in the south, south-west, south-east, and very much so in the central, but somewhat better (though far from satisfactory) in the north and north-west departments. The best crops are in the western and in the east and north-eastern districts. The weather during harvest-time being fine, the crops in general have been housed in fine condition, and the quality very good, though, for reasons above stated, the weight and colour have suffered somewhat, the weight perhaps to the extent of from one to four per cent. lighter than average. Rye is a very fair crop, and the same may be said of beans and peas. Barley is a very large crop, the largest during the last six years, quality fine. Oats a very full crop, fine quality. Buckwheat two-thirds of an average. Rapeseed half a crop. Hay defective.

N.B.—On the whole, the crop of wheat may be called 10 per cent. under an average (we calculate 93 to 94 million hectolires to be an average) in quantity fine, useful quality, and about two per cent. under an average in weight, *ergo* about 12 per cent. short in all; therefore cannot be compared to the excellent and abundant crop of 1898 (as such a crop only is grown perhaps once in 25 years); in fact it is about 30 per cent. inferior, and yet it will, together with the stock of old wheat left, which is estimated at about 18 million hectolires, we think, about suffice (if nothing particular occurs to the growing crops, or takes place in politics to cause speculations, to which the French are very much addicted, going from one extreme to the other) for home wants, which, according to the average of the last 10 years, is 96 million hectolires, in-

cluding about 15 million hectolitres required for seed. At all events, France will have no surplus to spare, though no doubt the quantity imported via Marseilles in grain will be re-exported in the shape of flour northwards as usual to Switzerland, Spain, &c.

HOLLAND.—Wheat, usual breadth sown; rye and barley about one-sixth; oats about one-third more, in consequence of the deficiency in the quantity of rapeseed, of which about one-fourth less planted. In Groningen and Friedland less rapeseed and oats sown, and more flax, as the increasing value of the latter encourages this cultivation. Seed time in general passed off under favourable circumstances. The weather mild in autumn and winter; the first fall of snow took place in February. Owing to the want of frost the crops suffered from vermin, and later on the rapeseed from frost rather severely early in March, so much so that in many places it had to be ploughed up, and summer corn suffered much from rain directly it had been sown; and again at harvest time, whilst housing, especially rye, and also wheat and barley, suffered more or less in colour, particularly barley, and wheat contains more or less smut. The weight of all kinds of cereals is about 3 kilos. lighter than last year. Wheat is about three-fourths to seven-eighths of an average. Rye moderate average, but in no respects so good as last year. Buckwheat bad crop; suffered from frost and drought. Oats tolerably satisfactory. Peas and beans ditto. Rapeseed in the northern parts one-fourth of an average; in the western districts tolerably fair. Rapeseed is being greatly less cultivated, but the cultivation of linseed is on the increase. Potatoes good crop, but here and there diseased.

N.B.—Holland this year will have to import, more or less (as usual); we fancy she will require even more foreign aid than last year.

BELGIUM.—Wheat: The usual breadth of soil planted, but, if anything, less, owing to the increasing cultivation of beet root. Seed time passed off favourably; for the want of hard frost in winter the weeds were not destroyed, thus the cereal crops in general, but in particular wheat and rye, in point of clearness, leave much to be wished for. The quality of the grain suffered more or less from rain (where not secured ere the wet weather set in), and rye suffered early in June from rain and frost; also wheat in point of colour. Wheat and oats are the best crops of the season, being a full average in yield and quality; good weight 62 to 63 lbs. and 35 to 36 lbs. respectively. Rye not so good as last year; weight 56 to 57 lbs. Barley satisfactory; weight 48 to 49 lbs. Potatoes good yield, but here and there infected with disease.

N.B.—Belgium we class amongst the importing countries, and she will require fully the same quantity, if not more, of foreign aid, as last year.

SWITZERLAND.—The cold weather in June did a deal of harm to the cereal crops, fruits, and vines. The cereal crop is scarcely even a moderate average, but quality good.

N.B.—Switzerland is always an importing country, and this season will require her customary assistance, received chiefly from Marseilles.

GERMANY.—**BAVARIA AND SOUTHERN DISTRICTS:** Wheat in general not so good in corn and straw, black ball being also more or less prevalent. Rye is very good, particularly in Upper Bavaria; in the hilly districts not so well spoken of, having suffered from frost in June. Barley a good crop in every respect. Oats less satisfactory. Hay and clover middling. Potatoes good. Hops one-fourth to one-third of an average, and poor quality. **SAXONY (Central Germany):** Wheat very moderate average—not so good as last year, being small in the berry and light in weight; rust and sprout more or less prevalent. Rye tolerably good yield, quality middling. Barley good, middling crop, but the berry is frequently found to be very small. Oats 40 per cent. short in quality and weight. Beans and peas defective yield. Potatoes middling. **BERLIN DISTRICTS:** Wheat not quite up to the mark, neither in quantity nor quality. Rye good yield in straw, but less in corn; quality very good. Barley very good; also oats in quantity, but quality not altogether satisfactory. Pulse satisfactory. Buckwheat very deficient in every respect. **TILTST AND MEKEL DISTRICTS:** Wheat and rye very good crop, though here and there smut and sprout is prevalent, and the storms in July did harm to both. Barley, oats, and peas very good in every respect; seldom has there been such a fine barley and oats crop. Linseed suffered in colour and quality

from rain, the colour being darker than last year. Flax excellent. **KONIGSBERG DISTRICTS:** Seed time in autumn and spring good; the usual breadth of land sown in autumn, but in spring more barley sown in soils which had previously been sown with rübeed and ploughed up. The crops of all kinds of cereals in regard to quantity are satisfactory, but quality middling. The crops in general stood well in autumn, 1868, but suffered in winter from bad weather. Rübeed and clover suffered most. Wheat is affected with rust; condition rather various (might be better); weight 59 to 61 lbs. Rye, quantity satisfactory, also quality; weight 57 to 58 lbs. Barley large crop; weight 51 lbs. Oats large crop. Peas satisfactory; not so tares. Rübeed half a crop; quality good. Rapeseed all but a total failure. Potatoes good. Hay and flax suffered from frost. **DANTZIG DISTRICTS:** Usual breadth of land sown with cereals. Seed got in last autumn under favourable circumstances; the young plants wintered well—perhaps too much so, and the consequence was they could not recover from the harm done them by night frosts in spring, they being too far forward. This was particularly the case with Rübeed, which had to be ploughed up to a very great extent. Wheat scarcely a moderate crop, condition and quality various, 61 to 62 lbs. being the highest weight, some weighing only 59 lbs., and a deal 51 to 55 lbs. Rye moderate average; quality and condition tolerably good; weight 56 lbs. Barley beyond a full average; quality not so good as last year. Peas very full average; quality good; weight 66 lbs.; condition good. Oats a full average; quality and condition good; weight 36 to 37 lbs. Rübeed and rapeseed one-sixth of an average; quality good. **POSEN AND PRUSSIAN POLAND DISTRICTS:** Crops various, having suffered more or less in some few districts from wind and ungenial weather, and want of hands to carry the crop when at maturity; on the whole, however, the harvest is satisfactory; the hay crop in particular is large, and a deal is being exported to Great Britain, &c. Peas are also a good crop, seldom being so abundant for years. Rye and oats ditto, though rye is not so heavy as last year, which was an exceptional one for weight. Flax good. Potatoes rather short of average. Wheat in every respect defective, though in some districts there is better quality than in others, yet even then it cannot be called good. In nearly every district rust is to be found more or less, and the average weight scarcely 59 lbs., whilst 55 lbs., and even below that, is frequently to be met with. **SILESIA DISTRICTS:** The usual breadth of land sown with cereals; if anything rather more grain and less oilseed. Seed got well in the soil in autumn, but germinated unevenly; later on, however, it shot a head, but suffered from the frost in spring; but again recovered. Spring sowing also got in well, though late. Wheat a full average; various in quality, condition dry; weight 57 lbs. to 60 lbs. Rye a full average; good quality and condition; weight 55 to 60 lbs. Barley 16 per cent. above average, quality good; weight and colour not up to expectation. Oats 20 per cent. above average; quality not quite up to the mark. **UPPER POMMERANIA AND STETTIN DISTRICTS:** POMMERANIA: Wheat satisfactory in quantity, though not quite so good in quality. Rye: Large crop of straw, but quantity of grain 75 to 100 per cent. of an average. Barley generally good. Oats far from satisfactory. Pulse more satisfactory in straw than in corn. Potatoes a fair yield, though here and there diseased. **STETTIN:** Usual breadth of land sown; if anything, rather more barley, owing to better prices; wintered well, that is wheat and rye; only in the Uckermark complaints of insects in wheat. All cereals not so good in quality; colour and condition as last year (which, however, was an exceptional one in this and many other respects), owing to the rain during cutting. Wheat and rye 5 lbs., barley 1 to 2 lbs. lighter than last year, and colour as above stated damaged by rain; but notwithstanding this it is fit for brewers, owing to its mild and mellow quality, and it is freely taken for export. All cereals bulk well in straw. **LOWER POMMERANIA (ANCLAY, WOLGAST, GRIEFSWALD, DEMMIN, ISLAND OF Rügen, STRALSUND, AND BARTH DISTRICTS):** Usual breadth of land sown with cereals in autumn (if anything a little more wheat in some districts), and well got in. Spring sowing was not quite so favourably effected, and proceeded normally through the winter. In spring the autumn-sown grain stood most luxuriantly, so much so, that it was feared it stood too rank, particularly wheat and rye, but dry weather and night frosts

prevented this, and caused them to suffer more or less, even spring corn, particularly early-sown oats. Wheat is 21bs.; barley, 1 to 2lbs.; oats, 2lbs., lighter in weight than last year. Barley got rain; therefore, light; bright colour, seldom to be met with. Wheat is here and there infected with sprout. Wheat 6 per cent. above average in quantity, quality various, but one finds often very good, indeed some excellent qualities; weight 60 to 63lbs. Rye 3 per cent. under average, not near so good as wheat, and where caught in the rain, condition poor and sprout prevalent; weight 57 to 58lbs. Barley 4 to 7 per cent. under average, quality various, suffered from wet; weight 50 to 51lbs. Oats 20 per cent. below average, suffered much from rain, straw short, quality various; weight 34 to 36lbs. Peas and tares 20 to 30 per cent. under average, mostly small, suffered from mildew and insects. Hay 13 per cent. below average. White clover total failure; red ditto two-thirds of last year, quality good. Potatoes 15 per cent. under average. Tubers not large, here and there diseased. **ROSTOCK AND WISMAR (MECKLENBURG SCHWERIN) DISTRICTS:** One-fourth more land under wheat, and one-tenth more under rye, in place of one-third less being sown with oilseeds. The usual acreage has been sown with barley and oats, one-third of the land usually sown with beans, peas, and tares, has been sown with clover. Seed time in autumn and in spring passed off well; all cereals wintered well; the sudden change to dry and not weather in April, did harm to rye in particular, and the severe night frosts in May did also harm, but more than all, the frosts in June—as the unusual weather in June not only prevented the formation of the berry or quantity, but also caused the quality to suffer from smut and rust, particularly oats; barley and peas suffered more or less in general; wheat full average in straw, 10 per cent. more in corn, quality and condition various, on the whole good and useful, though more or less sprout prevalent; weight from 58 to 63lbs. Rye, in straw 5 per cent. above average, but in corn 10 per cent. below, quality good; weight 54 to 60lbs. Barley 10 per cent. short in straw and 5 per cent. in corn, quality tolerably fair, but cannot be denominated malting barley for export, though freely taken by our brewers and distillers; weight 50 to 52lbs. Oats 30 per cent. short in straw and 20 per cent. in corn; quality very moderate; weight 36lbs. Peas and tares 15 per cent. short in straw, and 35 per cent. in corn. Peas a full average in every respect; the colour of all cereals suffered somewhat from the unusual weather and is not so lively as one could wish. Rape-seed and Rabeen about an average yield per acre and quality good. Potatoes good crop. Clover nearly a failure. Hay 40 per cent. below an average. **HAMBURG DISTRICT:** The breadth of land planted with grain is the usual, but the yield of wheat and barley exceeds to a trifling extent an average. The rain during the harvest, also the cold weather which preceded, did harm to the condition, quality, and weight, and wheat is less mealy, also contains less gluten; weight seldom 60lbs., and still seldom above. Very little wheat is to be found that is in a perfectly dry condition and free from sprout. The poorest is the Saal wheat, then comes Marks, then Brunswick, and then the Mecklenburg. Barley good yield, but generally speaking has suffered in colour and condition from rain. In some districts in the Mark the barley was housed before rain set in, and is a fine pale colour, but not mellow, and this quality finds less favour than yellow-coloured barley, as the latter is mellow and malts better; weight varies from 51 to 56lbs. A considerable part has been housed damp and has often a slight smell, but the greater portion saved and free from sprout. Rye has mostly yielded below average in quantity and quality. Oats also below average, suffered much in colour, condition, and weight; in fact, the most unsatisfactory crop of the season. Beans good in quality, but damp and soft. Peas defective. **HOLSTEIN AND SCHLESWIG DISTRICTS:**—**HOLSTEIN:** About usual quantity of land sown with grain, but less with oilseeds; wheat good average, quality and condition very good; weight 60 to 62lbs.; colour fine. Rye moderate average, partly infected with sprout; weight 54 to 57lbs. Barley tolerably good average; bold berry; dry condition; and weight 53 to 54lbs. Oats nearly average; good quality and condition; weight 40lbs. **SCHLESWIG:** Breadth of land sown with wheat, one-third less, with rye one-third more, and half as much with oilseeds. Wheat moderate average per acre; quality and condition middling; weight 60 to 61lbs. Rye full average, but quality not over fine, having

suffered from rain whilst harvesting. **BREMEN AND OLDENBURG DISTRICTS:** Crops got well into the soil in autumn and spring, but the cold summer was not very favourable for their getting a-head. Wheat (little grown in the Bremen and Oldenburg districts) full average per acre; quality, generally speaking, tolerably good. Rye suffered much in May from night frosts, and during the harvest time, from rain; under average; quality and condition, not satisfactory; weight, light Barley in the neighbouring interiors not much grown, but on the coast a deal of land sown, particularly in the soil which had been previously occupied with rape, afterwards ploughed up, and then resown with barley; *ergo*, larger than usual yield; but even this is of no great importance, as the quantity of land sown with the article, on the whole, is but trifling. The same may be said of oats; quantity and quality good, and the coast will have some to spare. Beans, good yield; quality, various. Potatoes, two-thirds of an average; various in quality. **EMDEN AND LEEK (HANOVER) DISTRICTS:** One-sixth more land sown with grain and oilseeds, but the seed had to be ploughed up and barley and oats sown instead. Wheat, best crop of the season, being 25 to 30 per cent. above an average; quality good, though a sprinkling of smut is to be found; weight, 59 to 60lbs. Rye is the worst crop; mostly carried in a damp state; weight, 54 to 55lbs.; quantity considerably below an average; will require an importation of foreign rye. Oats, about an average, but owing to the extra breadth of land sown, the quantity is a very full average, say similar to the yield of 1866, but quality not so fine; weight, 36 to 37lbs. Beans, a good average; a large breadth having been sown, but quality being soft, will require kiln drying; the quality, on the whole, not being bad. Barley not cultivated much in the districts; quality suffered from rain. Rape-seed, never known to be so bad; not enough for home use. Potatoes and hay, good. **RHINE DISTRICTS:** Wheat, satisfactory; also barley and rapeseed; rye, not satisfactory; neither quantity nor quality. Oats, various; some good and some bad; on the whole, about an average. Buckwheat suffered from the dry weather, and is only about half an average. Potatoes, moderate crop. **WESTPHALIA DISTRICTS:** Wheat, on the whole, good crop; suffered a little from rain during the harvest. Rye, moderate average. Oats below an average; suffered from drought; barley also. Buckwheat, full crop. Peas, good. Beans and tares, not so good. Rapeseed, poor crop. Potatoes, good; though here and there diseased. Clover, a failure.

N.B.—According to the official report of the Prussian Minister for agriculture, and compiled by him from 1,449 reports, rendered from competent parties in the different districts, the following is the average: Wheat, 97 per cent. of an average; rye, 92; barley, 94; oats, 89; peas, 87; beans, 83; buckwheat, 62; potatoes, 84; rape, 73; beetroot, 89; and flax, 83 per cent. of an average, and the bulk of straw is considerably better than last year. Taking the average of the last ten years, from 1860 to 1869, both included, the yield this year is, wheat, 0.06; rye, 0.04; barley, 0.05; peas, 0.01; potatoes, 0.04; beetroot, 0.01 more; but oats, 0.06; buckwheat, 0.14, and rapeseed, 0.02 less than an average. Taking Germany on the whole, we don't think she will be able to spare so much as last year (which we in our last yearly report put down to one and a half million quarters, and which has turned out close upon the mark, namely in round numbers, seven millions cwts. of wheat and flour) for the simple reason, because Stettin won't be able to export so much, owing to low prices ruling there, and the very short crops in Hungary, &c., we will, therefore, put down the probable export of wheat and flour from Germany this campaign, at one and a quarter million quarters in all.

DENMARK.—The usual breadth of land sown with cereals. Autumn seed-time effected under most favourable circumstances. Got well through the winter; being strong, the cold spring and the general cold (bordering at times on frost) during the whole summer, did more good than harm. Wheat, 15 to 20 per cent. above an average yield; quality and condition various, some having been housed in damp weather; colour good, weight, 60 to 61lbs. Barley, very full average yield, and good average quality; suffered from rain in August, which caused the colour to be rather dark, and not over fine for malting purposes; weight, 54 to 55lbs. Rye, full average, notwithstanding that it did not blossom under very favourable circumstances; quality, satisfactory; weight, 57 to 58lbs. Oats, under average; quality and condition various; a deal will require kiln-drying, having suffered from wet; weight, 40lbs.

Backwheat, nearly a failure. Potatoes, tolerably satisfactory. Hay, large crops, and of good quality.

NORWAY.—Usual breadth sown with cereals. Seed time in the southern districts took place under favourable circumstances. In the northern districts not so good, as frost and snow came early and put a stop to it. In the southern districts, rye moderately good yield in quantity and quality; weight, 56lbs. Barley, ditto; weight heavy, 34 to 36lbs., colour good. Oats, middling crop; weight, 37lbs. Potatoes, poor yield, suffered from frost. In the northern districts, crops very middling, even in November a good deal of oats uncut and potatoes unlifted—the frost did great havoc.

SWEDEN.—Unusually good crop of everything, all secured in good dry order, particularly rye, wheat, and barley, and also part of the oats. The northern districts are not quite so good, having suffered more or less from frost. Oats and rye, the two chief articles of export, the quality and condition is good, having been carried in favourable weather.

N.B.—Scandinavia has this year been blessed with good crops; Denmark will have more than usual to spare of all cereals; Norway, in consequence of its being a mountainous country, grows but little grain, the chief produce being grass and other feeding stuffs, thus little grain (except oats, of which a portion can at times be exported), in fact not sufficient for home use and imports yearly, more or less, particularly rye, which is the customary food, and barley, which is used by our large brewers; and last of all, peas, but less of wheat and beans, and no maize. This year the southern districts will require considerably less foreign aid than usual; the northern will require fully the usual aid. Sweden will this year require no aid; indeed a considerable quantity of oats and rye already exported, and in spring will export still considerably. Denmark will be able to spare about 250,000 qrs. of wheat.

RUSSIA.—Owing to the high prices ruling during the past year landed proprietors (large and small) have gone on increasing the breadth of soil under grain, and last autumn and this spring the quantity of land sown with cereals was double and treble the quantity sown in comparison to former years, particularly in the following governments principally. In the southern districts in Bessarabia the increase has been chiefly in winter wheat and maize; in Podia (Russian Poland) soft wheat; in the Chernow and Ghirka governments rye; and in the districts of Elisantgrod the increased breadth consisted of barley, oats, and linseed. The seed was got in last autumn under favourable circumstances and wintered well, and the timely fall of snow having afforded them sufficient covering. Seed time in spring also passed off satisfactorily; but later on, up to the end of May, the crops suffered very severely from drought. The government Putlara suffered most from the drought and insects, the so-called corn-worms, thus the crops are in this government not so good as in the others. In the government Kiev the heat was suffocating, being thirty degrees Réaumur in the shade, but rye was in ear, and the rain that fell later refreshed the summer corn. In the neighbourhood of Odessa farmers, despairing of having a good crop, were about cutting the rye, green as it was, for feeding purposes, when early in June rain set in and saved the greater portion of the crops; the rain continued but with few intermissions up to the end of August, nay, even up to harvest, which it greatly retarded, and did more or less damage to the colour of the grain wheat in particular; the quality is tolerably good, and weight excellent, Ghirka wheat weighing in many instances 62½ lbs., and white wheat 61½ lbs. per imperial bushel. The crops along the Sea of Azof, Marianople, Berdiansky, and in the government of Rostoff (on the Don), the crops are by no means as good as last year, the quality is various, also colour, having suffered from rain in July along the Don, particularly government of Rostoff, suffered from drought, mice, and rain, and the crops are even less satisfactory, the quality being poorer than the yield along the Sea of Azof. In Russia Poland (particularly in Podolia) the crops are excellent in every respect; in some few districts hail did harm in July. Central Russia suffered more or less from the corn worms, but on the whole the crops are good. The Baltic Provinces have also been favoured with moderate good crops, notwithstanding the cold, damp, ungenial weather up to July, which caused great fears for their safety. Estland has again been one of the less-favoured governments, plenty of straw but very moderate of corn. In Bessar the hay crop is very poor, rain having damaged it, and also caused more or less sprout in wheat and summer corn.

N.B.—Taking Southern, Eastern, Western, and Central Russia, also Russian Poland, on the whole, and the extensive increase in the breadth sown, the wheat crop may be put down as very satisfactory. Rye a very moderate average. Barley a very full average, light in weight. From the Baltic provinces, little barley will be exported, the demand for homes use being greatly on the increase by the large brewers. Oats also full average, though light weight. Maize and linseed satisfactory. Northern Russia, and even Archangel and Siberia, have had moderate good crops this year, and this is very gratifying after the deficient harvests of the last years. Notwithstanding the good crops, owing to shortness of stocks on the 1st September, we think, Russia will not be able to spare more than last year's, which we then put down, and which turned out to be the quantity we estimated, viz., 1½ million qrs. wheat, and even not so much as that, if prices don't improve.

AUSTRIA AND HER PROVINCES: GALLICIAN, BOHEMIAN, MORAVIAN, AND HUNGARIAN DISTRICTS.—**PROVINCES OF UPPER AUSTRIA.**—Wheat and rye a better crop than barley and oats; on the whole, the cereal crops are about two-thirds of an average. **LOWER AUSTRIA:** Wheat, rye, and barley, not so satisfactory in quantity as oats, which are a very excellent crop, yet, the yield of said cereals are a good average yield, but in quality not so good as last year. **DALMATIA:** Wheat, barley, and oats, a moderate crop, which suffered from ungenial weather in May, and drought in early June, and later on hail. **GALICIA:** In the sown the yield is best; in general wheat suffered somewhat from storms in quantity, but the quality is good; the same may be said of barley; oats in quantity and quality good; buckwheat excellent in every respect; maize good. Peas, in quantity, poor yield, but quality good. Lentils, middling quantity and quality. Potatoes and turnips tolerably good; suffered from excessive rain end of August and early in September. **BOHEMIA:** Wheat, a good crop. Rye suffered from frost at night times in May, but, on the whole, not to any great extent, and the crop is pretty fair. Barley and oats, a moderate average. Hay and clover, not over good. Rapeseed, a failure. Potatoes and turnips, satisfactory. **MORAVIA:** Crops suffered more or less from night frosts in May, and in many sandy districts a large breadth of land had to be ploughed up; maize suffered most; the other cereals turned out proportionately much better in every respect. On the whole, the harvest is a moderate average. **HUNGARY:** In the early part of the year, cereals promised well, though here and there some patches of wheat, which had suffered from dry frost without snow; the said patches were ploughed up and sown with spring corn. Had all gone on well, as the favourable appearance of the crops in spring led one to expect, the harvest would have been equal to that of 1867, or near thereto; the yield, as it is, very obsequered, in some districts good, in some middling, and in others very poor, so much so, that they had to be mowed down for cattle feeding. Great heat in May (29 deg. Réaumur) causing drought; then hail and cold weather in June; this particularly the case in the Temeswar districts, where the crops are the worst. Autumn sown corn in Hungary suffers most; spring corn sown somewhat better. Bulk of straw considerably less, and yield of corn very much smaller the last year. Locusts, end of July and early in August, did also great damage to the crops. In the Banat districts, crops very deficient in quantity, but quality, condition, colour, and weight good; the same may be said of the yield in the Theiss, which is one of the most fruitful districts. On the whole, the crop of wheat is estimated at one-third to one-half of last year in point of quantity; in other respects, excellent, though here and there much is prevalent.

N.B.—Taking Austria and her provinces in general, Low and Upper Austria two-thirds to three-quarters of an average Dalmatia nearly an average. Galicia very good average, as no doubt would have been able to export largely (via Trieste in particular), as the following four Railway Companies, namely, the Lemberg, Csernowitz, the Carl Ludwig, and Northern and Southern Railways, have combined to reduce the rate of freight considerably on grain from Galicia, it is not been that owing to the failures last year in the crop vast deal of the present crop would be absorbed. Bohemia yield good, which is very satisfactory, that province have had a very poor yield last year. Moravia, a moderate average. Hungary, 30 to 50 per cent. under an average exports will be trifling, as all will be required for own consumption and to keep the mills going, although they are now working one-fourth time. There are parties who maintain that, in spite of the deficient crop, Hungary will export freely, giving the following as their reasons for thinking

namely: "In good years, Hungaria produces 60 to 70 million metens (12 to 15 million quarters) of all kinds of grain, of which 40 goes for home use, leaving 20 to 30 million metens (4 to 6 million quarters) for export, and that the deficiency in this year's yield is more than covered by the stocks of old grain held in store." This may be all very correct, but the gents have forgotten to take the quantity of grain required for seed into consideration; and if the official statements of the Hungarian government may be relied upon, the following is the calculation, founded upon last year's good harvest:—44,038,909 metens wheat; 24,636,100 do. rye; and 3,809,500 do. mixed corn, spring wheat, &c.; total, 77,188,000 metens; from which deduct for seed and food for 9,890,400 people, leaves 12,644,600 metens, or about 2,900,000 quarters; last year the crop was a good one, and nearly one-third to one-half larger than the present. Last year we put down the probable exports of Austria and her provinces, of wheat and flour as equal to 14 million quarters; this year, we think, the half, say three-fourth million quarters of wheat and flour, satisfy the latter.

TURKEY AND DANUBIAN DISTRICTS.—**MOLDAVIA, WALLACHIA, TURKEY.**—Same breadth of land sown as last year, but not under favourable circumstances, as it rained heavily during the time, and even continued to fall copiously some time after the seed had been got in, which proved injurious to the crop. The continued drought which followed the rain prevented the grain from germinating; thus, the corn weighs light, but is point of colour and appearance exceeds last year's. Quantity, about half to two-thirds of last year. In the province Diana (that is, Caralla, Port Lago, Kiramati, &c.), the crops are so bad that they won't suffice for home wants, except maize, which is a tolerably fair crop. The province Vola is one of the most favoured, but even there the weight of the wheat and barley is light. **Danubian Districts:** Last autumn (1868) was very unfavourable for getting the seed into the soil, it being too dry, which is a great evil in the Danubian districts, and the seed could only be got late into the ground, but as the months of December and January were very mild, in fact, more like spring than winter months, and had snow only fallen, autumn corn would have promised plenty, but instead of this, dry cold weather, accompanied by biting northern winds, set in, which nearly destroyed the whole of the said seed. The cold, in fact, the winter, did not last long, and the Danube was only closed by ice seventeen days; the spring as customary was damp (which is greatly in favour of spring work), so that the greater part of the soil sown in autumn was ploughed up and sown afresh, and even a greater breadth of soil than usual was sown with grain, and up to the beginning of May everything promised favourably. More land than usual was sown with wheat in particular, owing to the higher prices paid in the last year in proportion to other grain; less maize and barley, but more rye than usually sown. The summer set in dry and hot, particularly in June, and very little rain fell in the Central Wallachia, in fact in some districts thereof, the drought totally destroyed the wheat, barley, and rye. In Moldavia the crops were plentiful and good; in Wallachia Minor, also, good in quantity, but less satisfactory in quality, and in those districts in which too great haste had been made in housing the crops (rain having set in during harvest time), wheat was gathered damp, which spoiled its condition and weight, which is, therefore, very various, never known to be so much diversity as this season, there being wheat of 60 to 62 lbs., and as light as 53 to 54 lbs. Rye is on the average good, also in weight good. Barley, more bad than good. Maize, quality excellent, but quantity far behind expectation. In Wallachia Minor a great quantity of rapeseed cultivated, but nearly all is damp, and, like wheat, cannot well be shipped in sailing vessels; otherwise, the quantity and quality is pretty middling.

N.B.—Taking the Turkey and the Danubian Principalities on the whole, and notwithstanding the extra breadth of land sown with wheat in the latter, we do not think they will be able to export very much more than last year (which amounted to about half-a-million qrs.) we will say at the outside, and to round numbers, 700,000 qrs.

SPAIN AND MEDITERRANEAN DISTRICTS.—**SPAIN:** Crops, large bulk of straw, but of corn very deficient. The Northern provinces, which are the chief and most extensively cultivated part of the country, have been most favoured; but in the Southern the yield is very inferior, having suffered from drought. **Portugal:** Crops were less favourable than in Spain. **Italy:** Crops suffered from great heat and drought in May and June, the excessive heat forcing too premature ripening; locusts did also, in some districts, harm to the crops;

particularly oats suffered. The Central districts have had the worst crops, being 30 to 40 per cent. below an average: the Northern, and then the Southern districts, have fared best. **ALGERIA:** Large breadth of land sown with cereals; crops suffered somewhat in April from continued rain, also from hail; this latter did to barley, particularly in the Tunis districts, a deal of damage. In May a swarm of locusts did a sight of harm; the Southern districts suffered most. Quality of the grain in general is better than last year.

N.B.—Spain, and also Portugal.—Though the crops are better than last year, considerably so, said countries will require, this campaign, extensive foreign aid again. Stocks at harvest time, in Portugal, not being one-third of what was held last year. Italy stocks were more extensive, but the yield is very short, say about 6 to 7 per cent., and this country will also require aid. **Algeria:** In spite of the large breadth of land sown with cereals, the crops are deficient, and Algeria will again require more or less aid from abroad, even though the population of the country has decreased. Taking the Mediterranean ports in general they will require aid from abroad, to at least half what they did last campaign. Many well-informed parties think they will require even more than last campaign, and, therefore, will again be competitors for the surplus of the exporting countries with Great Britain and Ireland, Belgium and Holland.

EGYPT.—Less land planted with beans; yield, per acre, and quality good; but the quantity, owing to the less breadth of land sown, is 20 per cent. less than last year. Barley, about an average. Wheat crop deficient in quantity and quality.

N.B.—A very considerable quantity of land has, this year, not been cultivated, the Nile not having risen to the requisite level, and thus the soil could produce nothing. Egypt will, this campaign, have little cereal produce, especially beans and lentils, to spare for export. We cannot put the probable export at more than 250,000 qrs. wheat.

EAST INDIA.—Crops have suffered very severely from terrible swarms of locusts, particularly in the west province; the havoc done, it is stated, is very great, threatening famine. Rice had risen 25 per cent.

AMERICA.—Extra breadth of land sown with cereals in general, but less winter and more spring wheat. The winter being an open one, the plants suffered no harm; the spring was cold and backward, snow being on the ground in April, therefore spring sowing was late; but the weather in May, June, and July being tolerably favourable, the young wheat, rye, and barley plants promised well, but towards the end of the latter month drought set in very severely, which did sad damage. In the Southern and Eastern States the heat was very overpowering, and the said States suffered most from drought; on the other hand, the Western States suffered more or less from heavy rain, particularly during harvest time, which did harm to the condition and quality, sprout being prevalent here and there. The Central, Northern, North-Western, and North-Eastern States were most favoured, and on the whole the yield is tolerably fair; the winter wheat per acre yielding best, and the quantity of spring wheat is a full average (though not so large as expected), owing to the extra breadth sown; quality of both sorts satisfactory. Oats more sown; crops satisfactory in quantity and quality, though not equal to 1868. Barley, less breadth of land sown, and on that account the yield is under average. Maize is a very bad crop in all sections of the States, having suffered in every stage of its growth from abnormal weather, and therefore must be put down at 30 to 40 per cent. below average. Rye and potatoes moderate crops, particularly the latter. **CANADA:** Crops suffered from storms in spring; wheat not a good crop, but barley is a very full yield. **AUSTRALIA:** The combined heat and drought did a sight of harm, therefore the yield is not by far so productive as last year. At one time the crops promised abundance, and it was expected Australia would be able to export about half a million quarters of grain, but later on the tables were turned. **CALIFORNIA:** More land sown with grain, particularly more barley, the cultivation of this article being yearly on the increase. The crops are this year not equal in any respect to those of last year; the cold and damp weather in July protracted the harvest two to three weeks, and rust is prevalent. **CHILI:** Crops about an average both of wheat and barley.

N.B.—Taking the extra breadth of land and the enormous deficiency of the maize crop into consideration, we think the exporting capabilities of America may be put down at 15 per

cent. more, California 15 per cent. less than last year; and we think we are not far wrong in estimating the probable exports from said countries, including Chili, at 3 million qrs. wheat and flour; last year, we put them down at 2½ million quarters wheat and flour, which appears to have been pretty near (rather over than under) the mark.

SEED TIME.

Seed time this fall has, in the United Kingdom of Great Britain and Ireland, also in France, been good; in Belgium and Holland tolerably so; but in Germany only variable, in some districts good in others bad; for instance, the Königsberg and Holstein grain has been sown but under very moderate circumstances; and in Austria, particularly the province of Hungaria, under very unfavourable circumstances, owing to excessive and continual rain during the seed time, and which flooded the Danube and Theiss, and also the Dran and Sava, doing sad havoc; thus the prospects for the coming crops are not near so favourable generally speaking, as they were last year at this time.

PRICES.

KÖNIGSBERG, 22nd December.—Weather winterly, and the navigation from here to Pillau may be considered closed for sailing vessels. Supplies are very moderate, we note as follows: Wheat, fine, 60 to 61lbs., high mixed, 42s.; fine, 60lbs., mixed, 41s.; fine, 60lbs., red, 39s. per 480lbs. free on board. Barley, 59 to 53lbs., large, 25s.; 49lbs., small, 24s. per 448lbs. free on board. Rye, 54 to 59lbs., 28s. to 30s. per 480lbs. free on board. Peas, fine white boiling, 33s.; good white dry feeding, 31s., per spring the latter 29s. to 30s. per 520lbs. free on board. Oats, 58lbs., 14s. to 15s. per 320lbs. free on board. Tares, 28s. per 520lbs. free on board.

DANTZIC, 22nd December.—Weather winterly and stormy, and except for steamers, navigation interrupted by floating ice, but from Fairwater we can ship. Supplies moderate, demand more active at the reduced prices, which we note as follows: Old wheat, fine, 62lbs., high mixed, 45s.; fair, 60lbs., mixed, 42s. 6d.; new wheat, fine, 60 to 61lbs., high mixed, 42s. 6d.; fine, 60lbs., white mixed, 41s. 6d.; fine, 59lbs., mixed, 40s. 6d.; 57 to 58lbs., mixed, 39s. 6d. per 480lbs. free on board. Barley, 52 to 53lbs., large, 23s.; 48 to 49lbs., small, 22s. 6d. per 432lbs. free on board. Rye, 54 to 58lbs., 26s. to 29s.; 56lbs., per spring, 29s. 6d. per 480lbs. free on board. Peas, fine white boiling, 30s.; good white dry feeders, 29s.; per spring, the latter 29s. per 520lbs. free on board.

STETTIN, 23rd December.—Navigation still free for steamers. Supplies moderate, trade steady, good demand for spring. Wheat, new, 60 to 61lbs., good Uckermarks, Marks, and Pomeranian, 39s. to 39s. 6d.; per spring, 41s. to 41s. 6d.; 69 to 63lbs., fine selected ditto, 40s. to 40s. 6d.; per spring, 42s. to 42s. 6d.; new, 60 to 61lbs., mixed and high mixed, 38s. to 40s.; old, 63 to 64lbs., Uckermarks, Marks, and Pomeranian, 42s. 6d. to 43s. per 504lbs. free on board. Barley, new, 52 to 53lbs., Oderbruch, 27s. 6d. to 28s.; per spring, 28s. to 28s. 6d.; new, 53lbs., ditto, dressed, 28s. to 28s. 6d. per 448lbs. free on board. Oats, 35 to 36lbs., good average Pomeranian, 17s. 6d. to 18s.; per spring, 18s. per 320lbs., free on board. Peas, 64 to 66lbs., feeding 30s. to 30s. 6d.; 64 to 66lbs. boiling, 31s. to 31s. 6d.; per spring the former 31s. 6d., the latter 32s. 6d. per 520lbs. free on board.

ANCLAM, WOLGAST, GRIEFSWALD, DEMMIN, AND STRALSUND, 23rd December.—Supplies, owing to the stormy wet weather, moderate, demand more lively, several orders from the United Kingdom, Belgium, France, and Holland, for spring. For immediate shipment nothing doing, except that a large 2,500 qrs. steamer cargo wheat, being got off from Stralsund, which had been purchased some time ago. Prices are as follows: Wheat, 41s. per 504lbs.; barley, 23s. per 416lbs.; oats, 19s. per 320lbs., all free on board.

ROEROCK, 31st December.—Navigation still free. We may here remind our friends that even should the river from the town to Warnowmünde (the mouth of our river) be frozen over, we can ship overland in waggons at an extra expense of about 9d. per qr., consequently so long as the Sound, or rather Copenhagen and Elsinore roads, keep open, we can ship; *ergo*, our port is the latest closed in winter and the first to open in

spring, which is often of great value to parties who may wish to have their shipments off ere the gross of those from the Upper Baltic, &c., arrives. Supplies liberal, but will fall off, now that the farmers have raised the needful to the Christmas accounts. Our local speculators have been, and are still, buying very freely to hold over till late next summer, they considering present rates as a safe investment. Nothing shipping except one cargo of 800 qrs. per sailing vessel, and 2,500 qrs. wheat per a Flensburg steamer, which has been some months here on our slipway repairing. Some sales, via Hamburg, per steamer, have been made, and are making to Belgium and France. There has also been a good demand from the United Kingdom, Belgium, and France, per spring, but few sales, as our people all point to more money, and stocks are light in the extreme. We note our 61 to 62lbs. wheat 42s. free on board per 504lbs. for immediate or per spring shipment.

WISMAR, 31st December.—Prices about as above; possibly a trifle less might be taken.

HAMBURG, 29th December.—The demand for wheat is but moderate. Wheat, Holstein, 59 to 60lbs., 40s. to 41s.; 60½ to 61lbs., 42s.; Saale, Marks, and Brunswick, 60 to 60½lbs., 41s. to 42s.; 60½ to 61½lbs. Mecklenburgh, 42s. to 43s. per 480lbs. free on board. Barley, Saale, 51lbs.; 35s. 6d. to 36s.; chevalier Saale, 52½ to 53lbs., 37s. 6d. to 40s. per 448lbs. free on board. Good Elbe oats, 20s. 9d. per 320lbs. free on board. Dry fresh Elbe beans, 35s. 6d. per 504lbs. free on board.

FATTENING FARROW COWS.—This is often attended with a great and unnecessary expense of feed, simply because the proprietor does not understand what kind of management such animals require, in order to fatten well and in the shortest possible period of time. Young farmers—and sometimes old ones also, appear to be in doubt whether a farrow cow will or will not fatten as well while she gives milk, and many very intelligent men have continued to milk a farrow cow until she was almost ready for the butcher, and have flattered themselves that the cow was just as fat as she would have been had she not been milked. But no theory can be more absurd. No cow, or female of any kind of animal, can grow fat or fleshy, while giving milk, one half as fast as if they were not milked. When there is a good flow of milk, little or no fat is secreted. And why? Simply because all the nutriment, in the food which they consume, which would form fat or flesh, goes into the milk pail. Therefore, the sooner we discontinue to milk a farrow cow, when we have concluded to fatten her, the sooner she will be ready for the shambles, and the greater will be the amount of tallow and flesh in her carcass. These suggestions apply more particularly to spring and summer. If a farrow cow is in tolerably good condition in the winter, and the calculation is to make beef of her the next summer, or the next autumn, she may be milked all winter, provided she be well fed. But she should be "dried off" before she is turned to grass. Then by allowing such cows to feed on good grass during the summer, they will make fair beef early in autumn by feeding them with only a few bushels of meal. But if they be milked all summer we may expect less and tough beef, and but little tallow. Let farmers remember that if they gain ten dollars in butter and cheese by milking a farrow cow during the summer, they will have ten dollars worth less of beef and tallow than they would have had if the cow had been "dried off" a few months sooner. Young cows that are not too low in flesh dried off by the first of August will usually make good beef late in the fall. The time to discontinue milking depends very much upon the age and condition of the animal, and the amount of feed the owner has. The best beef is that quickest made and when pumpkins and corn can be fed, we would as soon have a cow milked until the first of September as not. An old raw-boned creature should not be milked at all during the summer, if no feed other than that which the pasture affords is to be given, and the meat should be sold to those who have good teeth and strong stomachs. A cow of this kind is never fit for food unless the flesh and fat is laid on rapidly.—*American Stock Journal*.

A VERY LIBERAL AGREEMENT.

Remember always to cultivate your farm according to the practice of good husbandry. Never in any one year plough up from grass more than so many acres of arable land; and after the first, or at all events after the second corn crop taken from the land so ploughed up from grass, be sure to summer fallow the same, or crop it with potatoes or turnips, properly manured and cultivated. Never take more than two corn crops without a fallow or green crop, well manured and cleaned, intervening. With the first corn or grain crop after such green or root crop, sow down every year with at least ten pounds weight of clover-seed and one bushel of well-cleaned perennial rye-grass seed per acre, and so in proportion for less than an acre, a quantity of land equal to what has been broken up from grass. Bear in mind, further, not to mow any of your grass-lands more than once in any one year, and never more than so many acres of the grass-lands in the same year. Cut yearly before seeding all the weeds growing on the pastures and banks. Apply regularly a sufficient quantity of lime to the farm. Never burn any part of the land without the permission, in writing, of the landlord or his agent. Carry all the weeds, collected while clearing the land, to a place convenient for having them rotted and mixed with lime, and applied to the land in the form of compost. Consume by stock upon the premises all roots, hay, and fodder of grain crops grown thereon. Bestow all the manure or compost, made or brought upon the farm in each year of the tenancy on such fields as may from the course of cropping be most in need of manure. Be sure to pay as liquidated damages £5 for every cart-load, and £10 for every waggon-load of hay, straw, manure, or compost which you sell, or suffer to be removed off the farm. Be sure you do not lop, top, or cut any of the trees or underwood on the farm, but carefully preserve these, and all trees hereafter planted, from all injury by cattle, or sheep, or otherwise. Never destroy any of the game, wild fowl, or rabbits, but use your best endeavours to preserve these, and warn off all poachers and other unqualified persons; for do not forget there is reserved to your landlord the fish and fishponds, and all kinds of game, wild fowl and rabbits, for him and his friends, and any other persons with his permission, to hunt, shoot, and fish. Nevertheless you may cut the hedgerows in the months of November, December, January, February and March (but at no other time), when necessary for the benefit of keeping the fences you have made. Before attempting to improve your farm, be careful to give your landlord or his agent ten days' notice of your intention to do so. If you lime your farm, let this be properly applied in sufficient quantities on well-drained or naturally dry land; and be very careful that the seeds you have sown with the crop next after a green crop have grown well, and that the plants are not injured by depasturing and the treading of stock or otherwise. Never neglect to well and properly stock and manage your farm and premises in an effectual manner; and if you wish to leave home for a month or two, mind and obtain your landlord's permission before starting.

And all this excellent advice is not, although it reads very like it, from the new year's number of *The Farmer's Almanac*; is not from the latest edition of Mr. Mechi's book, nor from Mr. Anybodyelse's Manual for Young Farmers. If anything, such instructions sound somewhat antiquated, and out of date in

these times, although, no doubt, the beginner should try to cultivate his lands on some established principle of good husbandry; get his weeds well rotted in a convenient place, and put the manure on such fields as may be most in need of it. On the other hand, it is not now quite so clear that a man should consume *all* the roots and hay he grows, as that it may not occasionally be convenient to sell off a load or two of straw. Still the lime should be properly applied and his seeds well grown; although one can scarcely see the advantage of his not destroying the rabbits, or of cutting the hedges at any very particular time, rather than when it might best suit him to do so.

Such very minute directions, as we have said, have a somewhat old-fashioned twang about them, after the manner of "now pick green gooseberries and look to your celery beds." But it is not so. The instructions we have quoted, if not from a new year's almanac or the last letter from Tiptree, are taken almost word for word from the most recent of all the Model Agreements that have been published. A document of which, when writing on the subject, the agent for the property proudly says: "I shall be very glad if I have suggested anything that may lead to a more liberal construction of agreements in general, the chief thing wanted in many districts to secure the rapid advancement of agricultural prosperity." So that this is not merely "A Model Agreement"—a thing that has certainly become something of a bye-word amongst us—but better still, a more liberal notion of an agreement. A liberal agreement which does not allow of a tenant destroying the vermin, liming his land, levelling an old bank, putting up a wire-fence, or selling a truss of straw without consulting his landlord or the agent upon any or all such important business! A liberal agreement that dictates to a tenant how he shall dispose of his weeds! A liberal agreement of which, as we may assume, the framer says the publication is permitted with "the belief, that containing as it does some important provisions for the protection of the 'improving tenant,' their discussion, and let me hope, more extended adoption, may materially assist in bringing about some much needed improvement in the rural economy of a large portion of the Principality." The writer is evidently serious, and so proud of his handiwork that he openly offers it not only as an example for the Principality, but for the criticism of others further a-field.

It is thus that the commentary follows in our columns, of this day: "*Liberal* forsooth! then, will Lord Lisburne's agent be good enough to favour your readers with what he calls a *stringent* agreement? So far as the wording of an agreement can do it there seems to be not a single process in agricultural pursuits but what the way, the manner, and the time is dictated to tenant. In the schedule of allowances I find the outgoing tenant is to be paid for his new seed bill, if they have been sown in proper course and have *grown well*. Paul plants, Apollos waters, and God gives the increase, but in this model agreement if that increase, from any cause, is withheld, no matter how well Paul plauted and Apollos watered, no remuneration, not even money actually spent is to be allowed!" Our correspondent is, by his own description, "a plain practical man of business, farming 600 acres of land in Lincolnshire," who a few weeks back sent us an able exposition of the Tenant Right of his own county that has since been

copied into half the papers in England. Further than this, at the last discussion meeting of the Farmers' Club, where a form of agreement was under consideration, Mr. Sewell Bead, though he would not appear inclined to give the Club credit for much in this respect, said, as we quoted him a month or so since, "he did not agree that it should be necessary for the tenant to go to his landlord and consult him about every improvement in the cultivation and management of the farm. If a good system of Tenant-Right, similar to that in Lincolnshire, were established throughout the length and breadth of the land, there would be no necessity for the tenant to go to his landlord and say, 'I want you to drain this field, and to chalk that one;' every man would then farm the land in the best possible manner, feeling satisfied that he or his representatives would some time or other reap the benefit." But here the champion of the liberal agreement at once joins issue. With however good a system of Tenant-Right, he *will* still make it necessary for the farmer to go and consult his landlord upon not merely every improvement but about almost every act of husbandry he engages in in the cultivation of the farm.

It is some two or three years that we called attention to a precious agreement that was propounded in Carmarthenshire, and we have here to speak to the merits of its successor in the Principality. But can nothing be done to advance the agricultural tone in South Wales, where it would seem to be politic to give a servant more liberty in his management of your garden than you are prepared to allow a tenant when farming on his own account? With the hope that the discussion of its "important provisions" may do something for the rural economy of Wales, we have given this liberal agreement in full, although certainly with little thought of its "more extended adoption." An old simile says that the buoys at sea serve rather as objects to avoid than attract.

ANOTHER MODEL AGREEMENT.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—We who are deeply interested would be very much obliged by your notice of the Farm Agreements contained in a copy of the *Welshman* newspaper, sent by this post.

We are, sir, your obedient servants,

A FEW WELSH FARMERS.

SIR,—The subject of farm agreements or leases being one, which, from its great importance, has commanded much attention of late, and as you express a belief that the publication in your columns of a new lease, now being granted to his tenants by the Earl of Lisburne, with a desire to improve their condition, by encouraging them to lay out with greater security, more capital and labour in the management and improvement of their farms, would be of some use to many of your readers who are interested in such matters, I have the pleasure of forwarding a copy for that purpose, and I should at the same time, without at all desiring to intrude my opinions on any one, wish to be permitted to make a few remarks on the subject, principally in order that some of the reasons which induced the adoption of the form of lease now in question, may be more readily understood—and I may premise that the consent to publish the lease is all the more willingly given, from the belief, that containing as it does some important provisions for the protection of the "improving tenant," their discussion, and let me hope, more extended adoption, may materially assist in bringing about some much needed improvement in the rural economy of a large portion of the principality. It will scarcely be disputed that the backward state of agriculture in many districts is owing in a great measure, if not entirely, to the prevalence of yearly agreements, determinable with the usual six months' notice, and void of any

security to the tenant for his outlaid capital and labour; and it cannot I think be matter of wonder that under such a system the majority of tenants are unwilling to lay out more money or expend more labour on their farms than is simply necessary to cultivate them, and that too often in a very indifferent manner; and that fencing, draining, and other improvements, are little thought of. I admit there are exceptions, and that we do sometimes see farms managed in a way to reflect the greatest credit on the tenants; but they are sufficiently rare, and what meets the eye too often is—badly tilled, poor, undrained land, neglected fences, and the long string of attendant evils. And if you ask "Why is this?" "Why don't you improve?" the almost invariable answer is, "Give us some security and we will improve." Will any one deny that the man who lays out his money on the property of another is only reasonable when, before doing so, he asks for some security, either in the shape of time wherein to reimburse himself for his outlay, or, in the event of leaving his farm, a guarantee for the repayment of a fair proportion of the cost of his improvements, the benefit of which he has not had time to reap? I am convinced that the proprietor who fails to encourage his tenants to improve their farms, by refusing to grant them some such security, will eventually be the loser. I know the belief is held by many, that leases for at least nineteen or twenty-one years, are the only cure for the evils I have mentioned; but it is questionable if even leases for that period would in a great many cases be productive of the desired result. No doubt to many it would be all that is necessary to induce them to go on with the improving of their lands heartily and energetically, but on the other hand I fear there are many who have fallen into such confirmed habits from long usage that it is at the least extremely doubtful if even a twenty-one years' lease would rouse them from their apathy—and who would only value a lease as the means of securing them in the possession of their farms, which the proprietors would have the mortification of seeing returned to them at the end of twenty years, in as bad, or even a worse state than at present, notwithstanding the introduction of any number of "restrictive clauses." While then I am of opinion that it will be for the advantage of proprietors to give leases of sufficient length to good and improving tenants, it would I fear be unwise to grant them indiscriminately to all the tenants on most estates, without first having applied some test whereby the "worthy" may be distinguished from the "unworthy," and for such a "test" the lease now published, with the "schedule of allowances," will, I hope, prove useful. To the tenant who is desirous to improve, it will give a reasonable security, while to the unimproving tenant it will not, and is not intended to do much, further than to show the material of which he is made. It may be alleged that it is only a lease for one year, and leaves the tenant liable to removal on the usual notice, but here again it will be found to work in favour of the improving tenant. There are few proprietors so short-sighted as to put away their best tenants, and if they did attempt to do so, it is very seldom either convenient or advisable to put away a man to whom a good round sum must be paid for improvements. To another objection that may be urged—that it provides no preventive for the rent being advanced at any time, while the tenant is raising the value of the land by the expenditure of his own capital and labour, and before he has had sufficient time to recompense himself for such an outlay, again the tenant who has most improved his farm will be most secure; for if it is proposed unduly to raise his rent, the fact that he can put his farm into the proprietor's hands and demand payment for his improvement will in most cases prevent any such undue advantage being taken. On the other hand, no right-thinking tenant, after being allowed sufficient time to repay himself for his outlay, will refuse to pay a fair value for his land. While I therefore anticipate that this lease will, in practice, be as valuable to a good tenant as one for a longer period, it will enable the proprietor to judge pretty correctly to whom it will be advisable to grant a lease for a longer term—a thing he will find advantageous to do, as he will thereby extinguish the liability (a very considerable one) which he has created under the "Schedule of Allowances."

The conditions attached to the schedule will, if properly acted on, effectually prevent any confusion arising in regard to the tenant's claims, each improvement account on which there will be any "allowance," being certified and registered

within three months after completion. On the other hand, the amount of outlay on any single farm, and corresponding liability by the proprietor, can be kept within desirable limits by him or his agent, as their sanction must be given (in writing) to all improvements by the tenant, on which allowances under the schedule are to be made, before they are gone into—and while it is indispensable to the successful working of this system to have a carefully kept register of the improvements executed on each farm, in few cases, as far as my experience goes, will it be found necessary to "apply the drag." The oftener such cases do occur, the more encouraging will it be, and then the propriety of granting longer leases may be readily considered.

I shall be very glad, if in venturing on these few observations on a very important subject, I have suggested anything that may lead to a more liberal construction of agreements in general, the chief thing wanted in many districts to secure the rapid advancement of agricultural prosperity.

Yours faithfully,

ROBERT GARDINER (Lord Lisburne's agent).

Wenall House, Crosswood, Dec. 80, 1869.

THIS INDENTURE, made the _____ day of _____ one thousand eight hundred and _____, between The Right Honourable Ernest Augustus, Earl of Lisburne, of the one part, and _____ in the County of _____ of the other part. Whereas the said Earl is entitled to the possession, or to the receipt of the rent and profits of the farm and hereditaments, with the appurtenances hereinafter described, and intended to be hereby demised, as tenant thereof for his own life; and the said Earl has agreed to demise the said farm and premises to the said _____ in manner hereinafter appearing: Now this indenture witnesseth, that in pursuance of the said agreement, and in consideration of the rent, and lessee's covenants hereinafter reserved and contained, he, the said Earl, doth by these presents made in exercise and execution of the power in this behalf vested in him, and also under and by virtue of an Act passed in the 20th year of the reign of Her Majesty Queen Victoria, to facilitate leases and sales of settled estates, and of all other statutes, powers, authorities, estates, rights, and interests, in anywise enabling him in this behalf—appoint, demise, and lease unto the said _____ (hereinafter called "the said lessee"), all that farm, farmhouse, messuages, outbuildings, yards, gardens, fields, lands, and premises commonly called and known as _____ farm, situate at _____ in the parish of _____ in the County of Cardigan, containing in the whole about _____ (little more or less), the particulars whereof are more fully stated in the first schedule hereto, as the same premises are now, or lately were, in the occupation of _____ together with the actual and reputed rights, members, easements, and appurtenances of the said premises respectively. Except and reserved out of this demise, unto the said Earl and his assigns, all such parts of the said farm on which any timber or underwood is growing, with power at any time to plant trees, and to enclose or make plantations on any part of the said farm. And also with full liberty for the said Earl and his assigns, and his and their foresters, servants, and labourers, at all times to enter upon the said farm, for the purpose of repairing fences, planting, pruning, or other management of the woods, trees, and underwood thereon, and to carry off any of the produce of the same. And also except and reserved unto the said Earl and his assigns, all brick-earth, clay, clay-pits, quarries, mines, minerals, gravel, and sand, in, upon, or under the same farm, with full power for him and them, and his or their agents, lessee's, workmen, and servants, at all times to enter on the said farm for the purpose of making trials for the discovery of minerals, quarries of slates and stone, making ponds or water-courses for the conveyance of water, and doing all things necessary for the effectual working of all minerals, slates, or stones, that may be discovered in, upon, or under the said farm, or any part thereof, and to carry off the same at the convenience or pleasure of the said Earl or his assigns, he or they allowing fair compensation for any damage to the surface, and to the growing crops, thereby occasioned, the amount of such compensation to be mutually agreed on, or ascertained by a single arbitrator, pursuant to the provisions of "The Common Law Procedure Act, 1854," and to be allowed for out of the rent, on the next rent day after the amount thereof shall have been so agreed on, or ascertained as afore-

said. And also except and reserved unto the said Earl and his assigns, the fish and fishponds, and all kinds of game, wild-fowl, and rabbits, with liberty for him and them, and his or their friends, and any other persons with his or their permission, to hunt, shoot, fish, fowl, and sport, in, over, and upon the said demised premises, and to go, pass, and repass into upon, and over the same, for any of such purposes. Nevertheless, with liberty for the said lessee, his executors, administrators and assigns, to cut the hedge-rows in the months of November, December, January, February and March (but at no other time), when necessary for the benefit of or keeping the fences made thereby. To have and to hold the said farm, and all other the premises hereinbefore expressed to be demised, with the appurtenances (except as before excepted) unto the said lessee, his executors, administrators, and assigns, from the day of _____ from year to year, until the said Earl or his assigns, or the said lessee, or his executors, administrators, or assigns, shall determine the said tenancy by a six months' notice to quit, in the usual manner, or until the said tenancy shall be otherwise sooner determined as hereinafter provided: Yielding and paying, therefore, yearly, during the said tenancy, the rent of _____ by equal quarterly payments, on the 25th day of March, the 24th day of June, the 29th day of September, and the 25th day of December in each year, the first of such payments to be made on the _____ day of _____ next, and the last of such payments to be made in advance, twenty days next before the ending and determination of the said tenancy. And the said lessee doth hereby, for himself, his heirs, executors, administrators, and assigns, covenant with the said Earl and his assigns in manner following (that is to say), that he the said lessee, his executors, administrators, or assigns, shall and will do, perform, and observe, all and singular the acts, matters, and things, specified, in the articles or clauses No. 1 to _____ inclusively, hereinafter contained or set forth (that is to say):—

1. Pay the said rent hereinbefore reserved, at the times and in manner aforesaid. And also all existing and future taxes, rates, tithe rent-charge, tithes, and other charges, assessments, and impositions whatsoever on the said demised premises, or the rent thereof, or any part thereof respectively (the landlord's property tax excepted), during the said tenancy.

2. Occupy by the personal occupation of the said lessee and his family, or by his executors, administrators, or assigns, the farmhouse on the said farm. Not to assign, or underlet, or part with, all or any part of the said demised premises (except cottages to his or their own labourers, for tenancies not exceeding six calendar months at a time) without the consent in writing of the said Earl or his assigns.

3. Cart all materials free, for any new buildings that may be erected on the said farm, and keep all the buildings in good and tenable repair (English timber in the rough, and slates, being found by the said Earl or his assigns upon request), and carted by the said lessee, his executors, administrators, or assigns), whitewash the outside and inside of walls as they may require it; once in every third year of the said tenancy to paint, with two coats or more of good oil paint, in a workman-like manner, all doors, windows, and wood and iron work of the houses, buildings, and gates, and all such other things as are now, or hereafter during the said tenancy shall be painted by the said Earl or his assigns (which he and they are at all times to be at liberty to do). Repair all fences, roads, and bridges; keep all gates properly hung and in good repair; clean and preserve all young quickhedges, clear the drains, scour the ditches and watercourses, and prevent stagnant water from remaining on any part of the said farm; leave the whole houses, fences, gates, drains, ditches, and watercourses so well and sufficiently repaired, and in such order and condition as aforesaid, on the determination of the said tenancy; permit the said Earl and his assigns, and his and their agent, at any time to enter on the said farm, to view the state and condition thereof, and to give or leave notice upon the said demised premises, or some part thereof, to or for the said lessee, his executors, administrators, or assigns, of any wants of repair, or other defects; and the said lessee, his executors, administrators, or assigns, shall repair or amend the same respectively, within six weeks after any such notice shall be given or left as aforesaid; and in case of any neglect or default, the said Earl or his assigns may do or cause to be done, whatever is mentioned in any such notice, and reasonably necessary or proper, and recover the amount thereof with expenses, from

the said lessee, his executors, administrators, or assigns, by distress and sale, or by action or otherwise, in like manner as for rent in arrear.

4. Insure and keep insured, during the said tenancy, all the buildings hereby demised to the full value thereof, in the

Insurance Office, or in some other Fire Insurance Office to be mutually agreed on, in the joint names of the said Earl or his assigns, and of the said lessee, his executors, administrators, or assigns; and also produce and show the receipt for the last premium paid for such insurance in every current year, whenever requested so to do by the said Earl or his assigns, or his or their agent. And as often as any of the said building shall be burnt down or damaged by fire, lay out and expend, according to the directions of the said Earl or his assigns, or his or their agent, all and every the sum or sums which shall be recovered or received by the said lessee, his executors, administrators, or assigns, for or in respect of such insurance, and such other monies as may be necessary, in building or repairing such of the said buildings as shall be burnt down or damaged by fire as aforesaid.

5. Cultivate the said farm and lands according to the practice of good husbandry—never in any one year to plough up from grass more than _____ acres of the arable land of the said farm; and after the first, or at all events after the second corn crop taken from the land so ploughed up from grass, to summer fallow the same, or crop it with potatoes, or turnips, properly manured and cultivated. Never to take more than two corn crops, without a fallow or green crop, well manured and cleaned, intervening. With the first corn or grain crop after such green or root crop, to sow down every year with at least ten pounds weight of clover seed, and one bushel of well-cleaned perennial rye-grass seed per acre, and so in proportion for less than an acre, a quantity of land, equal to what has been broken up from grass. In the last year of the tenancy, the said Earl or his assigns, or his or their incoming tenant, shall have the privilege of sowing grass and clover seeds among the corn crops, to any extent he or they may think proper, and the said lessee, his executors, administrators, or assigns, shall at his or their own expense harrow and roll them down, and will not allow the young seeds, after the corn is cut, to be pastured or damaged by cattle, sheep, or otherwise.

6. Not to plough or convert into tillage without the consent, in writing, of the said Earl or his assigns, any of the meadow or permanent grass land. The measure of damages for each breach of this stipulation shall be £20 per acre, and so in proportion for less than an acre, payable by way of additional rent, during the year in which such breach shall occur, and during each subsequent year of the tenancy, by equal quarterly payments, on the quarter days hereinbefore mentioned, the first of such quarterly payments to be made on such of the said quarter days as shall happen next after the said breach.

7. Not to mow any of the grass lands more than once in any one year, and never more than _____ acres of the grass lands in the same year. To cut yearly before seeding all the weeds growing on the pastures and banks. To apply regularly a sufficient quantity of lime to the said farm. Never to burn any part of the land without the permission, in writing, of the said Earl or his assigns, or his or their agent. To carry all the weeds collected while clearing the land, to a place convenient for having them rotted and mixed with lime, and applied to the land in the form of compost. To consume by stock upon the premises, all roots, hay, and fodder of grain crops grown thereon. To bestow all the manure or compost made or brought upon the farm in each year of the tenancy, on such field or fields as may from the course of cropping, be most in need of manure. To pay as liquidated damages, £5 for every cart load, and £10 for every waggon load, of hay, straw, manure, or compost, which the lessee, his executors, administrators, or assigns, shall sell, or suffer to be removed off and from the farm, at any time during the said tenancy.

8. Not to lop, top, or cut, any of the trees or underwood on the said farm, but carefully to preserve the same, and all trees hereafter to be planted, from all injury by cattle, or sheep, or otherwise. Not to destroy any of the game, wild fowl, or rabbits, but to use his and their best endeavours to preserve the same, and to warn off all poachers and other unqualified persons.

9. Pay to the said Earl or his assigns an additional rent or rents, equal to five per cent. per annum upon the amount of

any outlay, which the said Earl or his assigns shall at any time or times during the said tenancy incur, with the consent in writing of the said lessee, his executors, administrators, or assigns, in or about the making or repairing of fences or drains, or any other permanent improvements whatsoever—such additional rent to be paid by equal quarterly instalments, on the usual quarter days hereinbefore mentioned, during the continuance of the said tenancy, the first of such payments to commence and be made on such of the said days as shall happen next after the said outlay shall have been incurred as aforesaid.

10. Pay to Mr. _____ the outgoing tenant of the said farm, the allowance (if any) due to him for lime used on the said farm, during the three last years of his tenancy, ending on the _____ day of _____, and for all rye-grass and clover seeds sown by him on the said farm, in the usual course of husbandry, in the spring of the year one thousand eight hundred and _____ (of which the said lessee, his executors, administrators, or assigns, will have the benefit), the amount to be so paid, to be ascertained in accordance with conditions stated in the second schedule hereto, and the same not to be payable until one week after the amount thereof shall have been so ascertained as aforesaid.

11. Leave on the said demised premises, at the determination of the tenancy, for the said Earl or his assigns, or his or their incoming tenant (if either of them shall elect to take and pay for the same at a spending price, and give six weeks' notice in writing of such election, before the ending of the said tenancy, to the said lessee, his executors, administrators, or assigns, or leave such notice for him or them at the principal farmhouse on the said farm) all hay, straw, and roots, being on the said farm, at a fair valuation, to be made by mutual consent, or by a single arbitrator to be appointed by the parties, or by a judge, pursuant to the provisions of "The Common Law Procedure Act, 1854," the same not to be payable until one week after the amount thereof shall have been so ascertained, by agreement or otherwise, as aforesaid. Also leave on the said demised premises, all unused manure without being paid for the same.

Provided always, and it is hereby agreed, that if the said certain rent hereinbefore reserved, or any part thereof, shall be unpaid for one calendar month next after any of the said days of payment (although no formal demand shall have been made for payment thereof), or if the said lessee, his executors, administrators, or assigns, will not, or shall not, do, perform, and observe, all the acts, matters, and things specified in the articles or clauses numbered respectively 1 to _____ inclusively, as aforesaid, and which are to be by him or them done, performed, or observed, or if he or they shall make default in the performance or observance of any such acts, matters, or things, or shall act contrary thereto, or shall be adjudged bankrupt, or make an assignment of all or any of his property, deed of composition, inspectorship, or other arrangement for the benefit of his creditors, or shall depart or absent himself from the said farm, for more than two calendar months at any time, or shall be unable to cease to well and properly stock and manage, or to carry on the same farm and premises in an effectual and profitable manner, then, and in any of the said cases, it shall be lawful for the said Earl or his assigns, without notice, to re-enter into and upon the demised premises, or any part thereof in the name of the whole, and the same to have again, re-possess, and enjoy, as if his or their former estate, anything herein contained to the contrary notwithstanding.

Provided also, and it is hereby agreed, that in case the said Earl or his assigns shall at any time distrain for rent, or any other payment hereinbefore reserved, and then due, he or they shall be at liberty to sell any hay or straw to be taken under such distress, subject to a condition or stipulation that the same shall be consumed upon the said farm, or some part thereof (instead of selling in the usual manner for the best price), and the purchaser or purchasers of any such hay or straw shall thereon be allowed and entitled, and is and are hereby authorised from time to time, during a reasonable period in that behalf, to bring and leave stock on the said farm, or such part thereof as aforesaid, for the purpose of and consuming thereon such hay and straw, without being a trespasser, or being liable to pay any compensation for the same,—nevertheless, the said Earl or his assigns, may distrain and sell in the usual manner, if he or they shall think fit,

And the said Earl doth hereby for himself, his heirs, executors, administrators, and assigns, covenant with the said lessee, his executors, administrators, and assigns, that he, the said lessee, his executors, administrators, and assigns, paying the rent hereinbefore required, and performing and observing all the covenants, articles, matters, and things, by him or them to be done, performed, or observed as aforesaid, shall and may hold the said demised premises during the said term and tenancy, without any interruption or disturbance from or by the said Earl or his assigns, or any other person or persons lawfully claiming by, from, or under him, them, or any of them. And that he, the said Earl, or his assigns, will, on the determination of the said tenancy (provided all arrears of rent to the time of quitting shall have been paid, and possession of the said demised premises given up to him or them, except such parts thereof (if any) as may be holden over by the custom of the country, or by virtue of any stipulation clause or article contained in these presents, and provided all conditions precedent mentioned in the second schedule hereunder written, shall have been duly performed by the said lessee, his executors, administrators, or assigns, but not otherwise), pay or allow, or cause to be paid or allowed by his or their incoming tenant, to the said lessee, his executors, administrators, or assigns, such allowances as are mentioned in the second schedule hereto, less the amount of all damages and sums then payable by the said lessee, his executors, administrators or assigns, to the said Earl or his assigns, for dilapidations, non-repairs of buildings, fences, gates, and drains, or other breaches of any of the covenants, articles, or stipulations hereinbefore contained, such amount to be mutually agreed on, or to be ascertained and determined by a single arbitrator, to be appointed by both parties, or by a judge, pursuant to the provisions of "The Common Law Procedure Act, 1854," before any of such allowances as aforesaid shall be made or paid, and the costs of, and incident to, any such reference and award, to be in the discretion of the said arbitrator, who shall direct by whom, and to whom, the same shall be paid, and shall in other respects have all the usual powers of an arbitrator, and whose award and decision shall be final.

And further, that the said Earl or his assigns will, on the determination of the said tenancy, provided all arrears of rent to the time of quitting shall have been paid, and possession of the said demised premises delivered up to him or them (but not otherwise), allow to the said lessee, his executors, administrators, or assigns, the use of the barns for housing and thrashing the corn crop of the last year, until Lady-day then next, on the condition of a supply of straw being thrashed by him or them, at his or their expense, for the foddering of cattle of the incoming tenant of the said Earl or his assigns, as the same may be required. Provided always, and it is hereby agreed and declared, that neither the heirs, executors, or administrators of the said Earl (but only his assigns) shall be liable for any breach of any of the above covenants, happening after the death of the said Earl. And it is hereby agreed and declared that whenever the "assigns" of the said Earl are hereinbefore mentioned, such word "assigns," shall be construed and deemed and taken to include the person or persons for the time being entitled to the reversion of the said demised premises, immediately expectant on the determination of the said term or tenancy hereby created, unless there be something in the subject or context repugnant to such construction.

And, lastly, it is hereby agreed that the said lessee shall bear and pay all the costs and expenses of and incident to these presents, and of the counterpart or duplicate.

In witness whereof, the said parties to these presents have hereunto set their hands and seals, on the day and year first above written.

Signed, sealed, and delivered }
in the presence of }

SCHEDULE OF ALLOWANCES.

The second schedule referred to in the preceding indenture. Allowances to be made for improvements, subject to the conditions undermentioned. No. 1 in each paragraph refers to the description of improvement, No. 2 to the conditions precedent, and No. 3 to the amount of compensation or allowance for the improvement effected. 1. Under-draining done by tenant at his own cost. 2. Provided the drains are cut not less than three feet deep, at regular distances, and are pro-

perly laid and filled, to the satisfaction of the landlord's agent, and are certified by him to be in perfect working order on determination of tenancy. 3. The whole expense of those made in the two last years of tenancy, five-sixths of cost of those made in the third year before quitting, decreasing one-sixth for each crop grown on the land on which drains have been previously made.

1. Draining, the tenant filling only. 2. Similar proviso. 3. Cost of labour in filling drains, made during the three last years of tenancy, at the rate of per perch.

1. Banks and live fences made at tenant's expense. 2. Provided the banks are well formed, and the hedges well cleaned and preserved, and both in good repair at quitting, and so certified by landlord's agent. 3. The whole cost of those made in the two last years of tenancy, four-fifths of those made in the third year before quitting, decreasing one-fifth each year for those made in the three preceding years.

1. Banks and hedges where landlord pays half the cost. 2. Similar proviso. 3. The tenant's cost for those made during the three last years of tenancy, two-thirds of those in fourth, and one-third of those in fifth year before quitting.

1. Levelling old banks. 2. Provided same is done to the satisfaction of landlord's agent, and so certified. 3. Cost of labour at the rate of per perch for those done during two last years of tenancy.

1. Wire fences; the lessor or his assigns providing wood. 2. Provided same are properly erected and in good repair at quitting, and so certified by landlord's agent. 3. Cost of wire for those erected during last three years of tenancy, two-thirds of those in fourth, and one-third of those in fifth year before quitting.

1. Liming. 2. If properly applied in sufficient quantities, on well drained or naturally dry land, and vouched by properly discharged accounts. 3. Three-fourths of cost (of lime only, as at railway station) of that used in last year of tenancy, decreasing one-fourth each year for the two terms preceding.

1. Ryegrass and clover seeds sown in the spring previous to quitting. 2. Provided the seeds have been sown with crop next after green crop, and have grown well, and the plants have not been injured by depasturing and treading of stock or otherwise. 3. The whole expense of purchase as shown by accounts from a respectable seed merchant.

N.B.—In this schedule the word "tenant" means the said lessee, his executors, administrators, or assigns; and the word "landlord" means the said Earl or his assigns.

Such allowances respectively to be subject also to the following conditions precedent, viz.: That the said lessee, his executors, administrators, or assigns, shall deliver to the said Earl, or his assigns, or to his or their agent, ten days' notice in writing of his or their desire or intention to make any such improvements as those mentioned respectively, 1, 2, 3, 4, 5, 6, in the said second schedule: and that the said lessee, his executors, administrators, or assigns, obtain the written authority of the said Earl or his assigns, or of his or their agent, for such improvements respectively, previously to their being made, and provided that within three calendar months next after each improvement mentioned in the said second schedule shall have been made and finished, the said lessee, his executors, administrators, or assigns shall present an account, in writing, of the whole cost of such improvement, and the same shall be certified by the agent of the said Earl, or of his assigns, as correct (either as originally made out, or as corrected and allowed by the said agent). And to prevent mistakes and disputes, such agent shall enter in a book, to be kept for that purpose, a true copy of each account so allowed and certified; and no such allowance as above mentioned shall be made or paid in respect of any matter or thing whatsoever not entered in the said book, and so certified as aforesaid, anything hereinbefore contained to the contrary notwithstanding.

LINCOLNSHIRE TENANT-RIGHT AND THE WELSH LIBERAL AGREEMENT.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—It is to be presumed from Lord Lisburne's model agreement that Welsh farmers know nothing of their business, and that the Noble Lord has determined to

allow no one to farm on his estate who is willing to do so, except in accordance with his own notions and ideas of agricultural matters and management. I have had twenty years' experience in agricultural matters as a tenant-farmer, &c., in one of the best parts of Lincolnshire, and have during that time seen many agreements, and know most of the arrangements and customs in that county, but I never before believed it possible that any man could string together such a mass of rubbish and call it a *liberal* agreement.

Liberal forsooth! then, will Lord Lisburne's agent be good enough to favour your readers with what he calls a *stringent* agreement? So far as the wording of an agreement can do it there seems to be not a single process in agricultural pursuits but what the way, the manner, and the time is dictated to the tenant. In the schedule of allowances I find the outgoing tenant is to be paid for his new seed bill, if they have been sown in proper course and have *grown well*. Paul plants, Apollos waters, and God gives the increase, but in this model agreement if that increase from any cause is withheld, no matter how well Paul planted and Apollos watered, no remuneration, not even money actually spent is to be allowed.

In Lincolnshire, if a farm is at liberty it is no unusual thing for an agent to have as many as 100 applicants, and so well has the *custom of the country* worked that

in almost all agreements allowances are made to outgoing tenants similar to those I forwarded to you a week or two ago, and those allowances as well as claims allowed to an outgoing tenant, by two valuers, are paid by the incoming tenant, the landlord never appearing in the matter. After the agent has let the farm the entry and valuation are as a rule conducted by two valuers, one appointed by each party, and so well is the custom established that it is seldom necessary to call in an umpire. After this is done grow good crops and keep your land clean, then you have very little to fear; but should a tenant be so unfortunate as to have to quit after a short occupancy his loss is reduced to the lowest possible amount by the custom as before stated. Let agents select proper men as tenants, allow them free scope in matters of management and detail, with a liberal Tenant-Right, and no landlord need fear the result; in fact, the landlord is the man who benefits the most by such an arrangement.

Please inform the Editor of the *Irish Farmers' Gazette* that I claim to be nothing more than a plain practical man of business, farming 800 acres of land in Lincolnshire, and knowing many Lincolnshire men who would gladly farm in Ireland under a liberal system of tenant-right, and without claiming *fixity of tenure*, if life and property were respected.

I am, sir, yours, &c.,

LINCOLN.

CALENDAR OF AGRICULTURE.

The ploughing of stubbles for fallows must be finished early in the month, or better done in the last month; and, also the grass leys for Lent crops. A late ploughing in a dry season keeps the furrows too open and without pulverisation. Carry dung from the cattle yards to heaps in the fields to be sown with green crops. Though fresh and unfermented dung is the best manure for use, the distance of the field from the homestead for the carriage of dung at that hurried season of the year, compels the keeping of farmyard dung in a near proximity, until the day comes of the advantage of moveable railways to produce the quick application by annihilating the distance; which is the peculiar prerogative of that most mighty of all the powers yet given to man. The time cannot be far distant when all the carrying work of the farm will be done by that agent.

The turnips must be all removed from the fields, and stored during the month, earlier or later, according to the climate. Feed all live stock regularly and amply, and thrash grains frequently to afford fresh straws. Greens and turnips will be the green food of the month, with oilcakes to finish any forward fattening bullocks. The sheep now lodged on grass lands are maintained on sliced turnips, chaffs and oats, to be fattened and kept in a forward store condition.

Feed bacon hogs as has been directed, with steamed roots and meals, mashed and mixed; and, as the full fattening is near, with one daily meal of dry grains, as beans and oats, to whiten and bind the flesh into firmness. Store pigs have roots now with a portion of steamed food. Litter the yards frequently, to be dry and warm.

Feed poultry with light grains and steamed roots mashed with meals, in troughs under a sheltered shed. Keep the floors clean. Litter the nests with chaffs and short straws. Begin to set hens on eggs for early broods of chickens.

Ewes will begin to drop lambs—a warm shelter is most essential, with juicy food, as when the dam is nourished the progeny will be reared.

During unfavourable weather, the carrying work of the farm will be done, as the removal of dung, delivery of grains, carrying of fuel and timber, and of stones for building and draining.

Flood watered meadows, and lay dung and composts on grass lands during dry weather; bush harrow and roll the surface, and pick off, by hand, the stones and rubbish that would impede the scythe. Spread mole-hills, and tufts of dung or grass lands, and repair fences and gates into a complete condition.

During the whole month, fell timber and cut under-woods, slash hedges, and plant new lines of thorns, plant all kinds of useful forest trees, though a dry season may prevent the planting in dry situations. Cut close by the ground any unthriven trees of former years, as a more vigorous shoot may arise from the stem. Open ditch plantations, and secure the fences against summer grazings. Fill up the vacancies of last year. Set osiers in beds and in rows on low damp grounds. Lay the beds dry by means of open dividing drains, and dig the ground one year before planting. Use the young stems, strong and healthy, with an eye bud at each end.

Dig hop-grounds, and open the hills to receive manures in very strong farmyard dung in ample quantity—rags, brines, composts of lime, and salt—all oliginous substances do well. Dress the roots, and plant in beds the shoots that are cut off to come in for sets.

Spring wheats are sown during this month on last year's fallows that may have missed the season, or on the turnip lands of the stronger quality, from which Swedish turnips have been grown and removed. This crop of wheat is not much used except in the Border counties, where the common Lammis wheat is sown in to the middle of March, when the crop is equal to the autumn sowing, but may be 10 to 14 days later in ripening in some cases.

On dry warm lands, under benign climates, sow early peas, beans, rye, and also oats in the end of the

month. On very light lands a great benefit attends the early sowings, from the moisture of winter remaining in the ground. In dry seasons the advantage is very considerable to early crops, with rollings very liberally applied.

Vetches must be sown as early as possible on lands of good quality, in an allowance of four bushels of seed to an acre, with a small mixture of oats. A thick seeding is essential to procure a close covering of barley for

an early green food, and for the purpose of smothering weeds and retaining the surface moisture. A thin leguminous crop is a most ruinous possession in growing weeds, and exposing the lands to extreme drought. Every attention must be paid to obtain an early crop of vetches, which form a very important part of the green food of the farm. A barley stubble, or a lay of grass, forms a favourable bed for the vetch plant, and always of good quality.

CALENDAR OF GARDENING.

The first month of spring introduces the sowing of seeds for the early crops that produce seeds as the articles of use; and also the planting of the seeds of the stronger plants of roots, tubers, and bulbs. Three kinds of plants come into the use of the kitchen garden—fibrous-rooted, as the legumes; the stronger roots of the many varieties of cabbages, with celery and asparagus; and the bulbs, taps, and tubers of the turnip, beet, and potato. The first class of vegetables, as peas and beans, are sown on lands prepared by the previous cropping with manures, and brought into fertility with a minute pulverization of the soil; the application of fresh dung raises fibres, stems, and leaves, rather than fruit. Legumes are therefore to be sown on rich lands from a previous crop of taps or bulbs. A slight digging or forking of the land is required, from the winter's exposure, by the ridging of the ground. Cabbages of all kinds are strong plants, and permit the use of the fresh dung from the liquid-pit, and without fermentation, and applied in a large quantity. Asparagus, celery, and rhubarb admit the same application, and also potatoes on dry lands that require moisture. Turnips, beet, parsnips, and carrots are best treated on rich lands without fresh dung, especially carrots, to prevent the luxuriance of tops and fibres beyond the roots that are wanted; the earliest plants of roots on lands previously enriched, and afterwards with dung well rotted in a fermented heap, as has been previously described.

On the dry soils of early climates, sow, in the intervals of fine weather that may happen, peas, beans, carrots, parsnips, onions, and beet-root—all on grounds prepared during autumn, and under the favourable circumstances of soil and climate. The weather, though usually inconstant and characterized by cold and piercing showers of snow, hail, and sleet, is on the whole ameliorated, and permits the operation of spades and forks during many fine intervals. In the later climates hardly any seeds may be planted during this month, though with advantage if at all possible, as early crops are generally the best.

The best kinds of peas for early cropping are Dillstone's Early, Carter's First Crop, Sutton's Ringleader, or Veitch's Early; these varieties are nearly all identical, and any one may be selected for use. Beans in the early long-pod variety, carrots in the French-horn kind, parsnips in the Student sort; onions, any true form of the white Spanish; beet in the very early variety of Dewar's.

Asparagus plots should be particularly attended to. There is nothing surprising in the flaming accounts of the enormous size of this vegetable. Give the plant the advantages of adequate means, and the kitchen garden will produce with any regular market gardener. To make a proper bed a degree of preparation is required, which may be somewhat similar to the following description: This is a crop that ought to yield a supply during twenty years; therefore, this much being expected, the foundation must be allowed to be strong and generous in proportion. Not fewer than four double-row beds should be provided for, and, as the rows of plants must be twelve

inches apart, with an allowance of an equal space on each outer side of the rows, the beds will be three yards wide. Besides the beds, there must be an alley between them, and one at both remote ends. Thus the entire space required will be 17 or 18 feet, the length of the rows being arbitrary.

The whole of this ground is to be dug out, trench by trench, three feet deep, with good drainage where required. If the mould be naturally rich and nutritious, it may all be employed. A bad subsoil must be removed and replaced in the bulk, with turfy loam introduced, and with it "a third part," bulk for bulk, of the best half-rotted farm-yard dung should be incorporated. It would not be amiss to add a bushel of bone-dust, or of guano, which comprises much of that substance, with some salt, sulphate of ammonia, and perhaps chalk. The materials being duly blended, and deposited, the beds will be found to stand high above the ground level, and may remain in that form to settle till Lady-day.

A similar preparation will be desirable for sea-kale, artichokes, and rhubarb, all to continue fertile for several years.

These directions for the production of most truly useful vegetables, and for all other purposes, are simple, and to be done by any tolerably expert farm-labourer, without incurring an expense for professional workmanship.

Sow twice or oftener spring spinach, salads, lettuce, and radish, and at the end of the month carrots, onions, leeks, and some early cabbage, the Early York kind; lettuce, the Paris White Cos; radish, the Wood's Early.

Paraley.—Sow a full crop, either in beds or for edgings: it lasts for two years, but annual sowings are best. In the end of the month sow some sweet herbs, as thyme, hyssop, marjoram, and savory; and further, at pleasure, salsafy, borage, lovage, burnet, coriander, and chervil.

Prepare good loamy soils for garlic and shallots.

In later climates, where hardly any crops can be sown during this month, the operations of winter are continued, in digging lands for crops, levelling the rough diggings of waste grounds, in preparing manures, and in using any advance that appears from the approaching season.

FRUIT DEPARTMENT.

Proceed with the pruning of gooseberries and currants, as the buds will be breaking. Retain a good supply of the best-placed young wood of the former, spurring but little. Currants require rigid spurring, to produce fruit in close clusters. Retain about six canes to each raspberry-bush. Cut these back to the bud, just under the part where the cane takes a bend; then collect and tie them neatly at the summits. Mulch over the ground about the plants; but do not dig the ground, though wandering suckers must be removed.

Fruit-trees may be pruned, as before directed; and finish with pears and apple espaliers, and all the spur-bearing fruit-trees.

Plant beds and borders of strawberries on deep, new, and rich grounds, if possible—Keen's for an early prolific crop; the Pines, the Queens, and Elton's for a later supply.

FLOWER GARDEN.

Sow annuals, seeds of the best sorts, in pots, about the end of the month, in a compost of rich light loam or leafy mould, or very old cow-dung. Heat in a frame

and protection under a glass will be useful for the hardier sorts, as convolvulus, sweet-pea, navelwort, Venus's looking-glass, dwarf lychnis, and candytuft. In open grounds worms, snails, and slugs too often destroy the plants as they emerge.

In the most favourable weather spread over flower-beds a fine compost of leaf-soil or cattle-dung, to be pointed in by hand-fork.

THE SEWAGE CULTIVATION AT LODGE FARM, BARKING.

BY THE HON. HENRY W. PETRE.

The following notes are supplementary to a report published in the autumn of last year, in which the experience of sewage as a farm manure during 1868 on Lodge-farm was described. I have now to review the results of a second year's course of experiments in sewage cultivation conducted on the same farm. The Italian rye-grass being of all the sewaged crops upon the farm the largest in extent, though perhaps not the most important product, shall be first dealt with. The whole area cut over this season is about the same as last year, viz., 53 acres, and it is for the most part the same land; the amount of grass cut exceeds 1,800 tons. The quantities are calculated between 1st September, 1868, and 1st September, 1869. The most advantageous time for sowing, so far as a maximum yield of grass in twelve months is concerned, is probably from the middle of August to the middle of September. It is found from experience that the rye-grass plant under sewage, tested by seven or eight cuts consecutively in the course of a year, will not last in full vigour more than twelve months upon the light soil of Lodge-farm. There is, however, a considerable advantage in sowing a certain portion of grass in the spring, as it attains its strength in the early autumn, when the other grass should be ploughed up or is getting weak. Of the 53 acres above mentioned, 12½ acres were sown last September; they have given in five cuttings 478 tons; and in six cuttings, up to 31st August, 541 tons. Another plot, 10½ acres, gave in six cuttings 371 tons 15 cwt. Of the grass grown in the spring one plot a little less than 2 acres has given in three cuttings 45½ tons; and another, nearly 2½ acres, sown at the same time, has given in these cuttings 59 tons. These plots are strong and will cut well up to the winter. The first cutting of grass this year was in February; it has been cut at intervals of from four to six weeks—on some occasions, when a strong demand existed, no doubt before it was quite matured, and on other occasions when it was past its prime. These irregularities in cutting, which affect the gross quantity, are unavoidable in dealing with such a breadth as 50 or 60 acres, partly consumed on a farm and partly sold in an uncertain market.

The sale of grass this season has been large, and at certain times it has not been possible to supply the demand. All doubts as to its value both as horse-fodder and for cattle seem to have disappeared. There has lately been some public discussion as to its value per ton for feeding cows; there was so great a difference in the value claimed as from 8s. to 15s. per ton. During the months of May, June, and July a daily average of 72 barn-gallons (16 pints each) of milk was produced on Lodge Farm from an average number of 52 cows; the daily feeding of these cows was at one period 4 tons of grass alone; occasionally 100lbs. of maize and 12lbs. of oil-cake were added for cows that had lately calved and those in low condition. Taking the milk at the low price of 1s. 4d. per gallon on the farm, the daily receipt would be £4 16s., and allowing 15s. per ton for the grass, the food would cost, including the maize and cake, £8 9s. In putting the price of the milk at 1s. 4d. per gallon, I give its ordinary value on the east rather than the west side of London, where in fact really good milk (on which basis this statement is made) is worth at least 1s. 8d., which price would give £8 for the 72 gallons of milk per day. Stall-fed milch-cows cannot indeed be fed so cheaply upon any other food with an equal yield of milk as upon sewage-grown rye-grass at 15s. per ton with a small ad-

dition of corn or cake. I must also refer to the result this season of feeding lean stock upon it alone. On the 24th April five steers coming three years old were tied up, their respective live-weights being 7½, 7½, 7, 7½, and 6½ cwt.; the first three were as poor and low as animals could be. On the 15th June, that is in seven weeks, their respective weights had reached 8½, 8½, 8, 8, and 9 cwt. During this period they consumed daily per head less than 1½ cwt. of grass.

I will now detail the results of a crop of wheat 4½ acres, grown for the third year on the same land, the second and third crop being grown with the aid of sewage, and the first without manure of any sort. The soil is a poor gravel, anything but a wheat soil. The wheat is of four sorts, viz.: Taunton dean, long straw white, nursery, and ordinary red. The whole was sown early in November with ten bushels of seed; the crop looked bad all the winter, and up to the middle of March, when it was sewaged, and began to improve. It was sewaged again in the end of April, and a portion received a third dressing in May, and by June, though a thin plant, it was strong. The appearance of this crop was much spoilt, and its yield decreased, by the following circumstance. The land had previously been on the flat, and some difficulty was thus found last year in getting the sewage to flow over the whole; therefore, immediately after harvest, it was put into high ridges 36 feet wide by ploughing and some assistance of hand-labour. The effect of thus moving the soil was to bring on many spots dead sub-soil to the surface; and the natural consequence of immediately sowing the land was that the plant failed, and was over the whole very thin. In spite of this disadvantage, the yield has been at the rate per acre as follows: Taunton dean, 3 quarters 5 bushels per acre; long straw white, 4 quarters, 3½ bushels; nursery, 3 quarters 3 bushels; red, 3 quarters 3 bushels. There were 3 loads of straw to the acre. In the same field six acres of Chevalier barley were sown in March; this crop followed white turnips, that were taken off the land before November, having followed a crop of rye. This crop of turnips produced £11 per acre on the ground. The barley crop looked remarkably well from the time it came up until the beginning of July, when the extreme heat hastened it so much as to destroy the prospect of a good crop. The land was ridged up in the same manner as that for the adjoining wheat, but the intermediate crop of turnips and the winter ploughing prevented any failure in the plant. This crop was, with the exception of one ridge, all sewaged in the first week of May; three ridges were sewaged a second time in the end of May, and a third time before the ear appeared. The result in yield per acre is as follows: That grown without sewage, 14 bushels on half an acre; that with two dressings, 4 quarters and 2 bushels per acre; with three dressings, 5 quarters per acre. Two experimental plots of about one acre each, of superior soil, in another field, were sown with barley, one on the 8th April, and one on the 9th May. The one was dressed with sewage in May, and the other in June. That sown in April looked well throughout, and was cut early in August, yielding at the rate of 6 quarters per acre, of good quality; that sown in May never looked so well, and was cut in the end of August. These crops of barley were the first I have known raised with sewage, and I am disposed to think that it could be better grown in succession to another crop that had been well done with sewage, than by the immediate application of that manure. Two acres of winter oats were

sown after mangold. They did not look well during the winter. They were sown in March and April, and were cut in August, yielding 21 quarters of good quality, with a large quantity of straw. The first attempt at growing horse beans with the aid of sewage has been tolerably successful. The beans were sown in April, after wheat, and received three dressings of sewage. The first dressing, however, instead of aiding the crop, very nearly destroyed it. It was put on by mistake when the plant was not more than an inch or so high, and the weather being cold, it so chilled the ground as to check the growth for some time. When, however, the plants recovered, the growth went on rapidly, the bloom setting well at the bottom of the stalks. The crop was harvested in August. Canary seed has again this year been tried with success; it was sown in March, sewage the end of April and middle of May; it looked well throughout, was cut in the end of August, and is calculated at not less than four quarters to the acre. A first experiment was made this season with early peas; $\frac{3}{4}$ acres were sown after oats on a poor piece of land in November, they never did very well, and were so cut up by the frosts in March that it became necessary to re-sow them; the crop was ready by the middle of June, and picking was continued till the 10th July, when in consequence of the fall in the price the remainder was saved for seed. The early pea crop is at all times a precarious one, and the last spring was particularly unfavourable to it.

I will now pass to the root and green crops, commencing with the early carrots. I may remark that this crop failed last year. An acre was sown in March of this year, and was sown in May, June, and July, during the last month solely for the purpose of drawing the roots, as the ground had become so hard as to make it impossible to pull them. The whole was cleared by the middle of August, producing over £38, and the land was sown down again with Lisbon onions, which, judging from the experience of last year, should be off by May next, yielding £25 to £30 per acre. Adjoining this crop is a very fine piece of parsnips, a better crop than that grown last year, which realised £30 per acre on the ground; this crop has been twice sewage. A most satisfactory result has been obtained this year in potatoes; three quarters of an acre were planted in March with Dalmahoy, Regents, and early Oxford; they were sewage in May and in June, with about 900 tons of sewage in all; by the end of July the ground was cleared, and the crop had produced in the Borough and Covent Garden markets more than £25. The land is now planted with broccoli. French beans have been for the first time grown this year, and with much success; rather over half an acre was sown in April, the weather being very unfavourable. They did very badly at first, the crop was three times sewage, and picking commenced in July; by the end of August the piece had realised over £20. Nine acres of sugar beet have this season been sown in April and May, most of which is a very promising crop. The per-centage of saccharine contained in these roots remains to be ascertained, but I may remark that the sewage-grown sugar beet from this farm last year was found to contain more sugar than any other English specimen sent to the mills at Lavenham. A heavy crop of mangold, under sewage cultivation, is now looked upon as a certainty; $\frac{3}{4}$ acres of yellow globe, sown this year in April (after wheat), sewage in May, June, and July, has presented a fine promise from the first, and the crop may be estimated at not less than 40 tons to the acre. An experiment was tried in transplanting three-quarters of an acre on the 12th of June of yellow globe; it drooped very much at first; one application of sewage set it up, and it has all the appearance of a fine crop, but not perhaps equal in weight to the above. This crop was preceded by winter cabbage, grown with sewage. Another experiment was tried adjoining this, of sowing mangold (long red) early in April amongst the winter crop of cabbage (grown with sewage), and of removing the cabbage as the mangold grew; two dressings of sewage were applied to the mangold, which has now the appearance of a heavy crop. It is the custom of the neighbourhood to plant winter cabbage with a heavy dressing of farm or London manure, and in the spring to plant potatoes among the cabbages. In imitation of this plan, potatoes were planted on 110 rods in the spring among the winter cabbage grown with sewage, and the result has been a crop of potatoes producing £10 12s. Last season a piece of swedes was tried, but the crop

failed, evidently from the seed being of a bad sort. This year an acre was sown in May, and although somewhat damaged by the fly, recovered by the aid of two dressings of sewage, but has now again fallen off, and presents a very indifferent appearance.

The cabbage crop during the year has been large and various. A piece, not quite an acre, was planted with red cabbage in November, and although the crop was much injured by the louse, which attacked the cabbages generally very much during the winter and spring, and though the stock was so bad as to render at least one-third of the plants valueless, it nevertheless yielded by the middle of August upwards of £25. This crop was sewage five times, and I observed that the sewage had a strong effect in destroying the louse, and recovering the plant weakened by its attacks. In September last $\frac{3}{4}$ acres of exhausted ryegrass were ploughed up and planted with cabbage, which was cut in the spring and realised £28, one-half of the plot having received two dressings of sewage and the other three dressings, the latter being the most productive. This crop was much injured by the severe weather in March. Part of a field of 11 acres was planted with cabbage in August and September last, a portion with farm manure and part with sewage; the latter were planted six weeks later but yielded a heavier crop, and when both sorts were sent to market together, the sewage-grown always commanded the best price, sometimes as much as one-third more than the others; this was greatly owing to the superior colour.

During the hot weather of July this year a good plant of white turnips was secured on an exhausted ryegrass plot, and there is now a crop that will be cleared before November, worth £10 to £12 per acre. I have again to refer to the difficulty of raising an onion crop with sewage alone. Since August last two crops have been grown. One acre of Lisbon onions, sown in that month, had by the middle of May realised upwards of £28, and $\frac{1}{2}$ acres of white onions, sown early in March, but which did not look well until June, have realised over £67 for the plot. The real difficulty in applying sewage to this crop appears to be to get the young plant sufficiently strong to bear it, and this difficulty is much greater with the spring than with the autumn crop, because the nights in spring are often, as they were this year, so cold that applying the sewage to the land chills the young plant. It unfortunately happened this spring that on two occasions out of the four that the crop was sewage a sharp frost followed at night, and nearly destroyed the crop; however, it recovered, and grew to be worth what I have stated above. The warmth of the land as well as the weather in the early autumn lessens the difficulty in starting an onion crop at that time. The sewage has the effect, in such weather as we have experienced in July and August this year, of keeping the onions green to the tip of the leaves, strongly contrasting with the ordinary crop. The strawberry crop, as compared with that of last year, has been a failure, chiefly owing to the destruction of the first bloom by the frosts. This, of course, had the effect of weakening the plants, and making the fruit both late and small. As this concludes the detailed account of most of the sewage-grown crops, it will be well to say a few words as to the expense of preparing the land for the regular application of sewage. During the last year I have brought into this state about fifty acres of land in various forms of beds from three feet to thirty-six feet wide; this has been done chiefly by the plough, and the average cost of the formation of these beds has not exceeded £2 per acre. It must be remembered that in the case of the wide beds, such as those from twenty-five to thirty-six feet wide, the formation is permanent; in the smaller, such as those from three feet to six feet, which are similar to the "lands" of ordinary cultivation, the formation must be renewed with each crop, though the dressing of the surface, necessary in some cases, is a permanent improvement. As to the question of the best form and size of bed, it is one that admits of so much difference of opinion and consequent discussion, that I do not think it is advisable on this occasion to do more than state that my present experience inclines me to use wide beds for grass, corn, and such crops as grow thick on the ground, and narrow beds for cabbage, mangold, and such as require space between the plants. The natural formation of the land must in all cases in a great measure guide the farmer in this matter. The land on Lodge Farm is exceptionally flat, and consequently in my opinion the most difficult to get into proper formation.

I will now proceed to give some account of that part of the farm which is cultivated in the ordinary way without the use of sewage. As no artificial or other manure is brought on to the farm, this portion is entirely dependent upon the manure made by the stock on the premises. In no case is sewage and ordinary manure applied to the same crop. The corn crops consist of wheat, of which a $5\frac{1}{2}$ acre field of long straw white, after cabbage, had a promising appearance from the first, until laid by a thunderstorm in July. An adjoining field of ten acres of the same wheat, after potatoes, stood up against the storm, is estimated at six quarters per acre, and is a good sample; both these fields were fed off with sheep. Another field of twenty-one acres was sown with nursery and red wheat, in the proportion of nineteen and two acres; this crop was after mangold, and for some time looked unpromising; it improved in the spring, and is now estimated at five and a-half quarters of a good sample to the acre. Twenty acres of early potatoes after wheat, consisting of shaws and regents, were planted in February; by the middle of August the land was cleared, realising over £26 per acre; 10 acres of this land were brought into form for irrigation as the potatoes were dug, and planted with cabbage, which have produced £20 per acre in the ground. Twelve acres of yellow globe mangold present a good appearance, and may be estimated at over 20 tons per acre. For the purpose of forming some opinion of the intrinsic value of sewage in agriculture, it may be well to consider some of the results of its use in growing the crops already referred to. The crop of winter oats of 11 quarters to the acre is at least double what would have been produced from the land without sewage. This result was obtained by the use of 1,000 to 1,300 tons of sewage to the acre. Potatoes, with two dressings of sewage, yielded a better crop than was produced on land in good condition by the application of farm-yard manure, worth, including the expense of carting and spreading, at least £6 10s. per acre. In cabbage crops two or three dressings of sewage, making from 800 to 1,300 tons per acre, will produce in quantity a crop equal to that raised by means of farm or London manure applied at the rate of 25 to 30 two-horse loads to the acre; whilst the effect on the colour and appearance of the plants caused by the sewage has frequently had the effect of increasing the price from 25 to 30 per cent.

During the year 360,000 tons of sewage have been sufficient to render highly productive 180 acres of the Lodge Farm. Of

this quantity 53 acres have been in rye-grass, bearing an average of five crops in that time, absorbing about two-thirds of the whole quantity of sewage, and more than 50 acres have had two crops, thus making 120 acres of land bear 382 acres of crop in the year. The value of the crops in the gross grown with the 360,000 tons of sewage is over £3,200. As a specimen of the rapidity with which crops can follow each other with the aid of sewage, I may instance a field of potatoes which was planted in February with farm manure and dug during June and July. As the land was cleared cabbage was planted, and in spite of the very hot weather the plants were well established. This crop will be cleared by November, in time for wheat, yielding not less than £20 net per acre. A plot of exhausted rye-grass, which had been cut four times since January, was ploughed up in July and sown with white turnips, which will be off the land by November, giving £10 net per acre. It may be said that this succession of crops is attainable without the aid of sewage. No doubt it is under favourable circumstances of weather and with a large supply of manure, but the advantage of the sewage lies in the fact that the more unfavourable the weather for the ordinary mode of cultivation, the more certain the results from the use of sewage. It may not, perhaps, be out of place to refer to the very unusual character of the seasons in the two years during which I have conducted the experiments on Lodge Farm. Last year was characterised by a summer and autumn of unprecedented heat and drought; the year to which these notes apply was remarkable for a winter of extraordinary mildness, which continued till March, when a real winter commenced, extending, with little mitigation, almost till June, and was succeeded by a sudden and excessive heat. The effects of sewage irrigation, observed during these two remarkable seasons, have fully satisfied me that all descriptions of farm and market garden produce may, with ordinary care, be raised with greater certainty and abundance, and with a less cost for labour, than in the ordinary mode. The certainty is increased by the power of applying the manure at the precise time that the crop needs it. The increased abundance is a necessary consequence of this assistance at the right moment. The saving in the cost of labour is manifest when it is remembered that town sewage, applied by gravitation, needs neither horses nor carts, and that several acres a day may be dressed by one man.

AGRICULTURAL REPORT.

NORTH WALES.

Like most parts of the country we have had heavy falls of rain of late, though we have not yet experienced any unusual flood. The characteristic of the weather since winter set in has been its extreme fickleness, scarcely two days together having been alike as regards temperature and atmospheric appearances. The wetness of November and December caused the wheats to be sown generally late, and the coldness of the soil prevented a rapid germination of the seed, so that it remained buried a long time before the blade appeared above ground. The plant looks healthy, and there is no fear of its becoming winter proud. The pastures have carried a fair quantity of keep, and stock of all kinds have done well. Milch cows at all near calving are in good demand, and fetch comparatively high prices. Sheep are generally healthy, though we have seen in some districts a good deal of scab. Fat pigs sell readily at 5½d. per lb. live weight. The great populations of Birmingham, Wolverhampton, and other large Midland towns, are good consumers of our bacon. They appear able to take any quantity we can send them, and weekly great numbers of hogs are despatched to these busy hives of industry. As the price of oats is low, pig feeding will pay this year notwithstanding stores are very high to buy in. Young ones from the sow, about nine or ten weeks old, fetch from 25s. to 30s. a-

piece. It appears that a corresponding rise in these animals is universal throughout England and Wales. We wish our farmers would be a little livelier after harvest, and do something towards cleansing the stables then. It is quite melancholy to see field after field still untouched, with couch and other weeds making all the running. It is no use to mince matters, we want a revolution in our arable farming. The system, if it can be dignified by such a name, is that of fifty years since, and is entirely exhaustive. Over large tracts something like the following is pursued. A five or six years ley is broken up and tilled two years consecutively, sometimes three years, with a white straw crop; potatoes, with a few acres of turnips, which are all carted off with their tops, follow, and then another white straw crop precedes the laying down to grass again. And as no cattle are fattened, and consequently no good manure made except that from a few pigs, and very little (in many instances not any) artificial manure of any kind bought, it is palpable that the soil cannot under such a course of husbandry increase in fertility. We believe there are many thousands of acres that have not been enriched one iota during the past half century; we are not sure they have not been rendered less productive. By degrees, however, we hope that the great impulse which has been given to all agricultural improvements in England and Scotland during the past twenty or thirty years, will have a stimulating effect upon the agriculture of this part of the Principality.—January 17.

AGRICULTURAL INTELLIGENCE, FAIRS, &c.

BAKEWELL FORTNIGHTLY MARKET.—There was a good supply of stock, with moderate inquiry. Beef—Scots 9s. per 14lb., heifers 8s. 6d., cows 8s. to 9s., according to quality. Barren cows from £11 to £15 each, heifers £11 to £15, sturks £7 to £11, yearlings £5 to £6, calving cows £17 to £24, ditto heifers £14 to £17, spring calves £11 to £15, ditto sturks £8 to £11 10s. each. A moderate supply of mutton; best quality 9d. per lb., ewes 8½d., rams 7½d. A good supply of pigs, at rather less money, prices varying from 30s. to 55s., according to size and quality.

BANBURY FORTNIGHTLY FAIR.—There was a good supply of sheep, but there seemed to be little demand, and the prices realized were from 5s. 6d. to 5s. 8d. The cattle were principally stores.

BRIDGNORTH FAIR.—The supply of horned cattle was small, particularly fat stock. The show of horses, pigs, and sheep was not much better. Good cows and calves fetched £13 to £18, good store pigs £2 to £2 10s., waggon horses £16 to £18.

CHURCH STRETTON FAIR.—The supply was below the average, beef realising 7½d. per lb. and mutton 8½d. to 9d. Pigs were sold at high prices.

DUNFERMLINE MONTHLY MARKET.—The attendance of purchasers was large, and there was a brisk and ready sale. Cows and queys brought from £10 to £18, being from 9s. 6d. to 10s. 6d. per Dutch stone; and milk cows brought from £8 to £13. The best sheep brought from 32s. to 45s., being from 8d. to 9d. per lb.; ewes from 13s. to 35s., or from 6d. to 7½d. per lb. A few remained unsold. The best cattle brought from £15 to £25 17s. 5d., being from 10s. to 11s. per Dutch stone. Pigs from £1 10s. to £6 10s., about 6d. per lb.

FORRES MONTHLY MARKET.—Some lots of prime fat, of which there seem still to be a good many in the county of Moray, were brought forward. Sales were somewhat stiff, but not a few lots were disposed of at remunerative rates, and the general average may be quoted at from 65s. to 70s. A lot of fourteen three-year-old crosses sold at £26 5s.; five three-year-old, polled, at £19; a stot and a quey for £65 the pair; four two-year-olds, polled, at £24; a fat cow at £18.

GLOUCESTER FORTNIGHTLY MARKET.—There was an average supply of stock, which sold readily, beef realising 7d. to 7½d., and Mutton 8d. to 9d. per lb. Pigs hardly keep up their late value, 11s. to 11s. 6d. per score being the present price.

GRANTHAM FAT STOCK MARKET.—A small show of beasts, but a good supply of sheep. Good prices were realised, many buyers being present. Beef made 9s. and pork 9s. per stone, mutton 7½d. to 8½d. per lb.

HAILSHAM NEW STOCK MARKET.—Welsh and Scotch runts, Sussex oxen, steers and heifers 5s. to 5s. 4d. Sussex cows 4s. 6d. to 5s. Southdown wether mutton, 6s. to 6s. 4d. Kents wether mutton 5s. to 5s. 8d. Veal 6s. There was a good supply of very good beef in our market to-day, for which trade was brisk, and a good clearance made. Good mutton sold readily at the above quotations, but with the inferior trade was heavy.

HIGHBRIDGE FORTNIGHTLY MARKET was moderately supplied with fat beasts, which met a tolerably ready sale at 12s. 6d. to 13s. per score. Of fat sheep there was a fair supply, and former prices realized—8d. to 8½d. per lb. There was a small number of cows and calves on offer, which changed hands at £14 to £16 each. Pigs in moderate supply, and for quarter-old alips 25s. to 30s. each asked; large store pigs 50s. to 60s.; good sows £5 to £5 10s.; but buyers were scarce, and but little business was done.

KNARESBRO' FAIR.—There was a good attendance of buyers and a plentiful supply of fat stock, at 8s. to 8s. 6d. per stone, part being left unsold. Calving Cows rather lower in price. Pork Pigs 9s. per stone. Fat Calves 7½d. per lb. A good supply of lean stock and a poor show of Horses.

LINCOLN FAT STOCK MARKET.—A small show of sheep but good in quality and a shade lower. The same may be said of beasts, which sold from 8s. 6d. to 9s. per stone.

LINLITHGOW FAIR.—All the stock was fresh. Twelve milch cows sold at prices ranging from £8 to £14, and stots £13 10s.; farrow cows at £8, and milch cows at £13 10s.

Messrs. Kirk and Duncan purchased milch cows at from £14 to £17. Mr. Henry Aitken sold milch cows at from £12 to £16 10s. Calving cows sold at £15.

MELTON FAIR was well attended by both buyers and sellers. The show of horned cattle was considered scarcely so numerous as on some former occasions. Both stores and meat beasts were decidedly lower, and to effect sales a reduction from recent prices had to be submitted to. The pitch of sheep was small. Some useful draught cart-horses were exhibited, and prices were high for good ones.

MORETON GREAT MARKET.—There was but a thin supply of cattle, not equal to demand, sales very brisk. Cows and calves from 12 to 22 guineas each. Fat bullocks 12s. to 12s. 6d. per score. Sheep, fewer penned than is usual, 6½d. to 7d. per lb. Lambs 20s. to 22s. each.

MUR OF ORD MARKET.—The first market for the season was held on Thursday. The chief demand appeared for fat beasts, and also for those in forward condition: in both classes the demand was brisk, and the prices realised were considered very good. The small supply of stock at the market is attributed in some measure to the plentiful supply of the turnip crop, giving sellers to hope that with further feeding by next market the prices will rise yet higher. Several lots of sheep were exposed, the greater part of which were sold at good prices. Beef may be quoted at from 65s. to 70s. per cwt. The following are some of the transactions: Two-year-old Highland heifers, fat, sold at £13 10s.; cross calves from £4 10s. to £6; two-year-old crosses from £10 to £14; and cross cows from £8 to £13. Mr. Adam sold two-year-old crosses at £13. Mr. Alexander Urquhart sold two-year-old cross stots at £11 10s. Mr. Jack sold two-year-old cross heifers at £10. Mr. Fowlie bought cross cows at £9. A milch cow for £6 15s.; cross calves at £5, and a cross cow at £9. Mr. William Anderson bought two-year-old Highland queys at £8 10s., and a two-year-old cross quey at £17.

NOTTINGHAM FAIR.—For animals of good quality there was a steady demand, and prices were about the same as heretofore, but inferior sorts were a very heavy sale, and late rates were difficult to support. Best milch cows made £20 to £23, other sorts £16 to £19, barren cows £12 to £16, heifers £10 to £15, sturks £6 to £7 per head. There was a small show of calves, and the trade was quiet at about former prices, 20s. to 40s. each. In sheep there was scarcely anything doing. Of horses the supply was only middling. Really useful animals, however, met a fair demand, and high prices were in most instances realised. Carriage horses and weight-carrying hunters sold at £65 to £70, the best ranging up to £100; useful horses for agricultural purposes £45 to £50, hacks and cobs £25 to £35, ponies £15 to £18 each.

SLEAFORD FAT STOCK MARKET.—A large supply of sheep, which met with a ready sale at late prices. Fair show beasts, which sold at late rates. Small show of pigs. Mutton from 7½d. to 8½d. per lb., hogs from 35s. to 45s. each; beef from 8s. 9d. to 9s. 6d., pigs from 8s. to 8s. 6d. per stone.

WHITCHURCH FAIR.—There was a good attendance. The show of stock was not so large as at the previous fair, but good considering the time of the year. There was a fair supply of pigs in the pig market, where business was brisk. Some capital cows, heifers, sheep, and pigs were well sold.

WORCESTER FAIR.—There was a very large market, and a great quantity of stock. Beef made 7½d. to 8d.; mutton, 8d. to 9d.; pigs about 11s. per score.

IRISH FAIRS.—NAAS: The demand, except for strippers and springer cows, was dull, as is usual at this season of the year; owing to the dearthness of fodder and scarcity of grass buyers generally wait till the February, which brings them a good way into spring. There was a fair supply of pigs, which, as usual, met a ready sale at the full rates which have been for some time current. In the sheep fair there was a middling attendance, and good mutton went off freely. Three-year-old heifers £13 to £14, two-year-olds £9 10s. to £11 10s., two-year-old bullocks £10 to £11 10s., year-and-half-olds £5 to £6, strippers £9 to £12; milch cows £13 to £18, meeting a brisk demand; fat sheep, 40s. to 60s. each; good hoggets, 32s. to 37s. 6d.; lambs, 21s. to 30s.; store pigs, 55s. to 60s.; bonhams, 25s. to 30s.; bacon pigs about 60s. per cwt.—

BALLTAY: Bacon pigs sold at 52s. 6d. to 57s. per cwt.; and stores at £1 7s. to £3 each. The largest fat pigs I saw was sold at £8 13s. Young pigs were sold at £2 to £2 5s. per pair. There was a fair supply of beef cattle selling at £10

to £35, springers £9 to £16, strippers £9 to £12 each. The demand for farm horses was great, and prices were very good.—**MAGUIRESBRIDGE**: Springers, scarce, changed hands at £18 to £19 each. Fat milkers sold at £17, and a few good animals fetched £20 each; three years old heifers sold easily at £17 to £18 10s. each, two years old at £11 10s. up to £12; year-olds fetched from £5 18s. to £7 10s., top quality. Beeves and three years old bullocks sold at £14 up each; two years old sold from £8 up, and yearlings £3 to £5 8s., which was obtained for some fine specimens. Stirks and strippers were scarce, and sold from £7 10s. to £9 each up. Good cows in calf £11 11s. to £13 10s. The show of cows and springers was not large, nor was beef largely represented. Inferior milch cows, as usual, were numerous, and sold from £7 up. Calves were numerous and sold from 30s. each. Sheep were pretty fairly supplied, but very few animals of top quality were offered at all, and most of the purchases were made by the neighbouring victuallers. Best mutton may be quoted at 6½d. per lb. Fat sheep fetched 38s. to 51s., store hoggets 31s. to 38s. 6d., and lambs 24s. to 36s., according to quality. Best pork fetched 53s. to 54s. 6d. per cwt., stores £2 to £3 10s. each, bonhams 24s. to 30s., and suckers 10s.—**SLANE**: Prime animals were eagerly picked up at an early hour, and principally for home consumption. The highest price per lb. was 7d. to 7½d., sinking off. Victuallers received 9d. to 10d. per lb., which left them a large margin of profit. Second class 50s. to 52s.; and inferior 4s. per cwt. less money. In store cattle little business was transacted, except for well-conditioned bullocks. Inferior bullocks and heifers were at a discount. One lot of three-year-old bullocks fetched £15 10s. The ruling prices, for those fit for export, were £8 10s. to £13 10s. Two and a-half year-old heifers £11 to £13 per head. Springing cattle sold from £11 to £16 each. A few very

inferior ones went at £7 10s. to £9 a-piece. The sheep fair was a busy one. Best wethers £2 15s. to £3 each, or 8d. to 9d. per lb., ewe mutton of best quality 6½d. to 7½d. per lb. The swine fair was well attended; light bacon pigs on the foot went from 58s. to 60s. per 112 lbs. Store pigs from £2 to £3 10s. each; slips 18s. to 24s. each.—**DUNDALK**: Superior beef brought 6½d. to 7d. per lb.; inferior ditto 6½d. to 6d. There was a large supply of store cattle, at for three-year-olds from £10 to £12 each; two-year-olds from £5 10s. to £7 15s. per head. Stirks from £6 10s. to £7 10s. each. Good springers and milch cows were anxiously looked after, but were exceedingly scarce. In one instance as much as £20 was offered for a very fine milch cow, which was refused. Fat wethers brought from £2 2s. 6d. to £2 10s. per head; fat ewes, 38s. to 46s. per do.; superior mutton may be quoted as selling at from 6d. to 7d. per lb. The pig fair was very largely supplied. Bacon rated from about 52s. to 54s. per cwt.; stores, 42s. to 52s. each; bon-nives from 16s. to 25s. for mere suckers. Farm horses, very limited supply, ranged from £17 to £18 10s. each, and a pretty brisk business was done.—**CASTLEBRIDGE**: Prime beef, from 60s. to 65s. per cwt.; middling and inferior, from 43s. to 50s.; three-year-old heifers and bullocks, from £12 to £14 each; two-year-olds, from £7 to £11; yearlings, from £4 10s. to £6 15s.; new milch cows from £14 to £20; springers from £9 10s. to £15; strippers from £3 10s. to £14; fat sheep from 40s. to £3 10s.; stores from 36s. to 48s. each; lambs from 24s. to 36s. each; bacon pigs from 55s. to 56s. per cwt.; store pigs from 46s. to 58s.; bonhams from 20s. to 28s. each.—**ATLONE**: The supply of pigs was much larger than for many years past. Some large pigs brought £8. The average price for fat pigs was £5 10s., or fully 6d. per lb. on their feet; stores and small pigs not in demand.

REVIEW OF THE CORN TRADE DURING THE PAST MONTH.

The beginning of the year, which promised at Christmas to open with more life and better prices, has been disappointing. The sudden break up of frost as January came, brought back the old feeling of the trade in the expectation of further foreign arrivals from the speedy opening of the Baltic. Frost has, however, once more visited us, but there is little belief that it will be severe, or of any continuance, and prices for the month have given way 1s. to 2s. per qr., though receipts in London have been inconsiderable. It is not forgotten that we began the year with a stock of about 2 million qrs. of wheat, of which about 500,000 qrs. were in London, and though money is not tight, and there is no prospect that it will be so, millers of substance with tidy lots of their own prefer looking on to increasing them. But after all, what is two millions quarters but about a month's consumption for the kingdom? As most of this was bought at about present rates, the monetary pressure is not over 4½ million pounds widely spread. We reckon that notwithstanding the present pressure, our wants will be fully six million quarters more up to 31st August, and should foreigners not like present rates or prospects, we may yet get a turn before them. Nothing is, indeed, yet the matter with the growing crop, but it is small and backward, and should an ungenial spring be before us, there is plenty of room for a rise, when speculation might put our granaries comparatively into a state of blockade, as well as raise foreign markets. Odessa has, indeed, about one million quarters, but merchants there, with banker's aid, can very well bear the weight of value but little beyond 1½ million pounds, and by the latest advices they seem to mean it rather than ship at a loss. New York is always more ready for a rise than decline, and though some people lately thought California would turn out wheat

like the sands in quantity, they have lately found a better demand there at firmer rates. And we have always found low prices have so many chances, that we should not be at all surprised to see present rates exceeded by 10s. per qr. before the cereal year has expired. France, too, receiving large imports constantly, has lately noted a moderate rise at Paris and some country places. The following were the recent values of wheat at the places named: white wheat at Paris 49s. 6d., red 46s. 6d., white at Bordeaux 47s., red in Belgium 46s. to 47s., white Zealand at Rotterdam 42s., red qualities at Hambro' 39s. to 40s., at Cologne 39s. 6d., at Stettin 40s. 6d., mixed to high mixed at Dantzic 34s. to 46s., wheat at Romanshorn 43s. to 50s., at Porrentruy 43s. to 47s., the heaviest red at Pesth (Hungary) 39s., low sorts 33s., soft at Odessa 25s. to 31s., white Buhi at Alexandria 35s. 6d., hard at Algiers 40s., red at Vienna 42s. at Naples 43s., Marianopoli at Genoa 38s., No. 3 spring red wheat at New York 33s. 6d. per 480 lbs., No. 2 37s., winter red 39s., Californian white 43s. 6d., white at San Francisco 30s. 6d., spring No. 1 at Milwaukee 24s. 6d.

The first Monday in Mark-lane commenced on a small supply of English wheat, with but moderate arrivals from abroad. The show of fresh samples during the morning being exceedingly limited, factors were able to make sales at the former Monday's rates, but the sales were slow. The inquiry for foreign was quite retail, and though no general decline was noted, the tendency was certainly downwards, and less must have been taken had sales been forced. With but few arrivals off the coast prices were maintained. The very decided change from frosty weather to excessive mildness, coupled with the dull statements from London, occasioned a loss in the country markets of all

that had been gained during the previous week, the improvement then, in some cases, being 1s. and in others 1s. to 2s. per qr. Liverpool also gave way 5d. per cental for the week, or about 2s. per qr. Edinburgh and Glasgow noted sluggish markets for wheat, with the turn in favour of buyers. Ireland was equally dull, and the markets for wheat rather worse.

On the second Monday the returns of English wheat were about the shortest since harvest, but foreign supplies were somewhat increased. The morning's show of samples on the Essex and Kentish stands was very poor, both in quantity and quality. The few lots really fine and dry went off, but not readily, at the previous rates: inferior were neglected. Foreign wheat was generally dull, and Russian, as well as American sorts, gave way fully 1s. per qr. Floating cargoes were a heavy sale at a 1s. decline. Though the temperature this week was lower, and night frosts prevailed, there was no recovery in the tone of the country trade. But little was passing anywhere, and under the idea of foreign ports shortly reopening, prices universally pointed downwards. Alford, Boston, Barton, Birmingham, Ipswich, Hull, Bury St. Edmunds, Market Harborough, St. Ives, Rugby, Rotherham, and Gloucester were all 1s. per qr. down; Barnaley, Melton Mowbray, Wolverhampton, &c. being 1s. to 2s. per qr. lower. Liverpool lost 2d. to 8d. per cental, or 10d. to 1s. 3d. per qr. Edinburgh was dull, and Glasgow down 1s. per qr. Dublin was 8d. to 6d. per brl. cheaper, and Cork remained in calm.

On the third Monday there was a rather better supply of English wheat, though still short; but the foreign arrivals were reduced. Again the show of fresh samples from the near counties was very limited, and from the damp and variable weather mostly in poor condition. This circumstance alone kept the few lots in good order at about the former range; but it was realized with difficulty, and rough lots were quite of uncertain value. The foreign demand remained very slack, and a reduction of 1s. per qr. accepted on all but the finest Baltic and white qualities. With a large fleet off the coast, no progress in sales could be made without accepting a similar decline. The country markets, with broken weather and such dull accounts from London, gave very few signs of animation in business. Most accounts were heavy. Many were down 1s. per qr., viz., Sleaford, Spalding, Market Harborough, Melton Mowbray, Louth, Newark, Alford, Ipswich, Thirsk, Hull, Bury St. Edmunds, Manchester, and Wolverhampton, and a few declined 1s. to 2s., among these were Barton, Rotherham, Sheffield, and Stockton. Edinburgh was 1s. cheaper, and Glasgow very dull, Dublin was 6d. to 1s. per barrel cheaper for Irish wheat, with hardly anything passing in foreign.

The fourth Monday opened on moderate English supplies, with fair arrivals of foreign. The show of samples on the Kentish and Essex stands was limited, and again mostly in poor condition. The few lots of fine white that appeared went off more readily, at the full prices of the preceding Monday, but inferior parcels hung still on hand. The business in foreign continued on a limited scale, and though all fine white high-mixed Danzig and red Baltic qualities maintained their value, there was more difficulty in clearing off fine sorts. Cargoes almost were, however, 6d. dearer for fine wheat. The imports for four weeks into London were 13,124 qrs. English wheat, 58,427 qrs. foreign, against 15,618 qrs. English, and 48,851 qrs. foreign at the same time in 1869. The imports into the Kingdom for four weeks, ending 15th Jan., were 4,482,495 cwt. wheat, 697,018 cwt. flour; against 1,710,850 cwt. wheat, and 397,344 cwt. flour for the same period in 1869. The London averages commenced at 43s. 11d., and closed at 46s. 7d. The general average opened at 43s. 5d., and closed at

44s. 1d. per qr. The London exports for four weeks were 2,260 qrs. wheat.

The flour trade, with good supplies from the country and fair foreign arrivals, has been dull all through the month, with a downward tendency; and to have sold freely on the last market, it would certainly have been necessary to accept fully 6d. per sack less. Barrels too, which have been relatively dear, closed somewhat cheaper, 28s. being about the value of superfine State, and French scarcely 84s per sack. Town qualities have been steady, the top price continuing 43s. per sack. The imports into London for four weeks were 87,930 sacks English, 9,714 sacks and 21,709 barrels foreign, against 75,950 sacks country, 2,113 sacks and 2,809 barrels in 1869.

Though the supplies of Indian corn have been moderate, the low prices of oats and great reduction in beans and peas, have contributed to keep prices at a very moderate range, say to 29s. per barrel for fine heavy yellow, and 80s. for Galatz white. The imports into London for four weeks were 27,514 qrs., against 28,280 qrs. last year.

Though the supply of malting barley, both English and Scotch, has continued on a moderate scale, prices were barely so good, excepting for anything really choice. Such being scarce, commanded a full market value. Secondary and inferior grinding foreign have given way full 1s. per qr., with but a retail inquiry. The supply for London for four weeks in British qualities was 16,812 qrs., and in foreign 37,061 qrs., against 17,823 qrs. British, and 48,740 qrs. foreign in 1869.

The malt trade has ruled extremely dull, brewers still complaining of a very limited consumption of beer, owing to the want of employment of the working population. Prices have therefore given way fully 1s. per qr., and are not to be depended on.

The low prices to which oats have been reduced have almost excluded English growths from the London market, while neither Scotland nor Ireland have sent on any shipments. Foreign arrivals have been irregular, commencing and closing freely, though the intermediate weeks brought but little. Yet, on the third market, with mild weather, and the prospect of further large imports, prices gave way 6d. per qr. On the fourth this was more than recovered, the rise on fresh Swedish being 6d. to 1s. per 38lbs., best quality being worth 19s. 6d. Russian sorts, though unchanged in value, sold more freely, say at 18s. 6d. per 38lbs. from granary. Prices seem too low for any material reduction, and it is plain that farmers of the United Kingdom do not intend to meet present rates, even if they have any stock left. Should there be any falling-off in foreign in consequence of frost, it seems very probable we shall be higher; and it is even doubtful, when the frost is gone, whether Swedish and Baltic export-houses will be induced to make shipments to meet present rates. The imports into London for four weeks were 1,380 qrs. English, 147,582 qrs. foreign; against 2,506 qrs. English, 960 qrs. Scotch, 8,055 qrs. Irish, 117,664 qrs. foreign, for the same period last year.

Beans have almost been constantly receding in value all through the month. It was very singular that farmers, when prices were 6s. to 8s. higher, at the commencement of the season, did not then forward their produce. It has lately come forward freely, and the consequence has been a steady downward course in demand and value, from the low price of oats, grinding barley, and maize. Fair small English new have been selling at 33s. to 39s.; old Egyptian at 34s. to 35s., and other qualities in proportion. The decline on new this month has been fully 8s. per qr., but we think the lowest point has been nearly reached. The London imports in four weeks were 3,083 qrs. English, 3,479 qrs. foreign; against 2,040 qrs. English, 12,598 qrs. foreign last year.

Peas have been in sympathy with beans, the frost not continuing long enough to originate an active inquiry for

boilers; they have receded in value about 8s. also, and old have been left for consumption as horse food, and brought only 83s. per qr., which is about the value also of duns; maples nominally 38s. London imports 2,019 qrs. English, 6,429 qrs. foreign; against 1,246 qrs. English, 766 qrs. foreign in 1869.

From the moderate imports of linseed it has risen 1s. per qr.

A quiet trade has been going on in cloverseed, chiefly in fine red qualities, at quite former rates, France this year not being able to send much of what the London market requires.

Tares have found rather more demand at 85s. for small Hambro.

CURRENT PRICES OF BRITISH GRAIN AND FLOUR IN MARK LANE.

		Shillings per Quarter.	
WHEAT, Essex and Kent, white	old 47 63 new 40 to 49		
" "	red 40 49 new 38 45		
Norfolk, Lincolnsh., and Yorksh. old 47 49 new 38 45			
BARLEY	28 to 33 Okevalier	new 35 43	
Grinding	36 39 Distilling	32 35	
MALT (nominal), Essex, Norfolk, and Suffolk		61 69	
Kingston, Ware, and town-made		61 69	
Brown		48 54	
RYE		51 53	
OATS, English, feed 18 to 20	Potato	23 25	
Scotch, feed 00 00	Potato	00 00	
Irish, feed, white 18	Fine	18 19	
Ditto, black 16	Potato	19 24	
BEANS, Masagan	33 36	Ticks	33 35
Harrow	36 39	Pigeon	40 43
PEAS, white, boilers 34	37 Maple 38 to 39 Grey, new 33 33		
FLOUR, per sack of 280lbs., Town, Households		37 43	
Country, on shore	30 to 33		33 35
Norfolk and Suffolk, on shore			28 29

FOREIGN GRAIN.

		Shillings per Quarter.	
WHEAT, Danzig, mixed	44 to 46	extra	60 to 63
Königsberg	44 45	extra	46 48
Rostock	43 45	fine	46 47
Silesian, red	40 41	white	43 44
Pomeran., Meckberg., and Uckermark	red	43 43	
Russian, hard, 36 to 37	St. Petersburg and Riga	38 39	
Danish and Holstein, red 39 41	American	39 43	
French, none	Rhine and Belgium	00 00	
Chilian, white 49	Californian 49	Australian 60 61	
BARLEY, grinding 23 to 24	distilling and malting 20 31		
OATS, Dutch, brewing and Poland 19 to 23	feed 16 18		
Danish and Swedish, feed 17 to 19	Stralsund	17 19	
Canada 15 to 16, Riga 17 to 18, Arch. 17 to 18, P'sbg. 19 20			
TARES, Spring, per qr.	small 34 35	large	—
BEANS, Friesland and Holstein		36 38	
Königsberg	32 to 34	Egyptian	33 35
PEAS, feeding and maple	33 35	fine boilers	35 36
INDIAN CORN, white	27 28	yellow	37 38
FLOUR, per sack, French	33 34	Spanish, p. sack 00 00	
American, per brl.	30 31	extra and b'le	23 23

COMPARATIVE AVERAGES.

WHEAT.			BARLEY.			OATS.		
Years.	Qrs.	s. d.	Qrs.	s. d.	Qrs.	s. d.		
1866	58,223½	45 7	67,309½	32 10	9,408½	22 10		
1867	66,806½	62 3	53,303½	44 5	9,176½	25 4		
1868	52,479½	71 6	71,265½	43 1	8,710½	25 7		
1869	70,452½	62 8	68,306½	45 0	6,348½	25 9		
1870	49,626½	44 1	66,860½	36 4	3,862½	21 4		

AVERAGES

		WHEAT.		Barley.		Oats.	
FOR THE LAST SIX WEEKS:		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Dec. 11, 1869		43 8	36 2	23 5			
Dec. 18, 1869		43 10	36 0	23 8			
Dec. 25, 1869		43 5	36 11	21 6			
Jan. 1, 1870		46 8	36 9	20 10			
Jan. 8, 1870		44 5	36 11	20 1			
Jan. 15, 1870		44 1	36 4	21 4			
Aggregate of the above		43 10	36 0	21 5			
The same week in 1869		52 8	40 0	25 9			

FLUCTUATIONS in the AVERAGE PRICE of WHEAT.

PRICE.	Dec. 11.	Dec. 18.	Dec. 25.	Jan. 1.	Jan. 8.	Jan. 15.
44s. 5d.
44s. 1d.
43s. 10d.
43s. 8d.
43s. 5d.

BRITISH SEEDS.

MUSTARD, per bush., brown 11s. to 12s., white 10s. to 12s.	
CANARY, per qr.	53s. 63s.
CLOVERSEED, red	66s. 74s.
CORIANDER, per cwt.	31s. 22s.
TARES, winter, new, per bushel	8s. 6s.
TRIFOIL	26s. 30s.
RYEGRASS, per qr.	26s. 30s.
LINSEED, per qr., sowing 70s. to 72s., crushing 60s. 63s.	
LINSEED CAKE, per ton	£11 5s. to £11 10s.
RAPSEED, per qr.	64s. 74s.
RAPSEED CAKE, per ton	£8 15s. to £7 0s.

FOREIGN SEEDS.

CORIANDER, per cwt.	31s. to 22s.
CANARY	53s. 63s.
CLOVERSEED, red 53s. to 63s. f. white	74s. 80s.
HEMPSEED, small 44s. to 46s. per qr. Dutch	46s. 48s.
TRIFOIL	26s. 22s.
RYEGRASS, per qr	26s. 30s.
LINSEED, per qr., Baltic 53s. to 63s. Bombay	60s. 61s.
LINSEED CAKE, per ton	£10 0s. to £11 10s.
RAPSEED, Dutch	66s. 70s.
RAPSEED CAKE, per ton	£8 10s. to £7 0s.

HOP MARKET.

Mid and East Kent	27 0	29 15	213 0
Wolds	6 0	7 5	8 0
Sussex	5 12	6 10	7 0
Bavarians	6 10	8 8	10 10
French	5 5	6 0	7 0
Americans	5 5	6 0	6 10
Yearlings	2 0	2 16	4 4

SOUTHWARK WATERSIDE.

Yorkshire Regents	70s. to 90s.
Lincolnshire do.	60s. to 80s.
Kent and Essex do.	60s. to 80s.
Dunbar and East Lothian do.	70s. to 100s.
Perth, Forfar, and Fife do.	60s. to 75s.
Do. do. do. Rocks	60s. to 65s.
French and Belgian whites	55s. to 60s.

BOROUGH AND SPITALFIELDS.

English Shaws	75s. to 85s. per ton.
" Regents	85s. to 100s. "
" Rocks	65s. to 70s. "
Scotch Regents	70s. to 100s. "
French	65s. to 70s. "

PRICES of BUTTER, CHEESE, HAMS, &c.

BUTTER, per cwt.		CHEESE, per cwt.	
Dorset	150 to 1	Cheshire	63 to 1
Friesland	132 136	Dble. Gloucester	64
Jersey	112 132	Cheddar	80
Farm, per doz.	16 19	American	68
BACON, per cwt.		HAMS; York, old	98 10
Wiltshire, per cwt.	72 74	Cumberland	98 1
Irish, f.o.b.	70 73	Irish, new	92 1

POULTRY, &c. MARKETS.—Turkeys, 4s. to 15s.

Geese, 3s. to 5s.; Ducks, 2s. to 3s. 6d.; Wild Ducks, 1s. 6d. to 2s.; Surrey Fowls, 2s. 6d. to 4s.; Sussex ditto, 2s.; Bantams and Essex, 2s. to 3s. 6d.; Irish, 1s. to 2s.; tame Rabbits, 1s. wild ditto, 10d. to 1s. 4d.; Pigeons, 1s.; Pheasants, 4s.; Petridges, 1s. to 1s. 6d.; Hares, 3s. to 4s.; Wildgeon, 1s.; Ptarmigan, 1s. 6d.; Woodcocks, 3s.; Snipes, 1s.; Gold Plover, 1s.; Bl. ditto, 6d. each; Larks, 1s. per dozen. Eggs, 16s. per 12 seconds, 8d. to 10d.

ENGLISH WOOL MARKETS.

CURRENT PRICES OF ENGLISH WOOL.		s. d.	
FLEECES—Southdown hogs	per lb.	1 1	to 1
Half-bred ditto		1 3½	1
Kent fleeces		1 3	1
Southdown ewes and wethers		1 0	1
Leicester ditto		1 2½	1
Sorts—Clothing, picklock		1 0	1
Prime		1 2½	1
Choice		1 1	1
Super		1 0	1
Combing, wether mat.		1 0	1
Picklock		1 1	1
Common		0 11	1
Hog matching		1 4½	1
Picklock matching		1 1½	1
Super ditto		0 11	1

Printed by Rogerson and Tuxford, 265, Strand, London, W.



Twelve various Rabbits.

London, Published by Rogers & Thadford, 25, Strand, 1870

PLATE V.

SOUTHDOWN WETHERS:

THE PROPERTY OF LORD WALSINGHAM, OF MERTON, THETFORD; AND WINNERS OF THE CHAMPION PLATE OF £50 AS THE BEST PEN OF SHEEP AT THE SMITHFIELD CLUB SHOW, 1870.

"Lord Walsingham never showed sheep of purer Southdown type than he has done this year at Birmingham. The first-prize pen were very pictures of what they should be; so admirably matched, with such nicely-shaded shapely faces, such neat symmetrical frames, and all over of such high breeding and quality. They were not large, certainly; and we were almost sorry to hear that they will go for more size in London. During the last twenty or thirty years, some alloy no doubt has been tried with the Southdown, but this is a mistake; for what we gain in weight we lose in almost every other way. The second-prize Merton pen were not equal to the first, but if there had been a cup for the best entry of any animals in the Hall, the Southdowns would have won it."

It was thus that we wrote of the best sheep at Birmingham; while of the Smithfield Club champions we said:

"The great pride of the show was clearly to be found amongst the Southdowns. Lord Sondes had some very good second-prize shearlings, and Sir W. Throckmorton's third pen were heavier than the first shearlings; but the style and quality of the Mertons were deservedly triumphant, as it is to be hoped we are coming to see that it is not mere weight which marks the excellence of a Southdown. The light-weights from the same famous flock were still prettier, and Mr. Foljambe and Lord Sondes quite deserving of their places, keeping to purity of type as well as to early development; but Mr. Rigden, whose stock would seem to come very capriciously, was in no force, and Sussex, indeed, quite out of

form. No wonder that the judges commended the class of old sheep, for never has there been one so regular and true in form after high feeding from very lambhood. And here the Merton wethers reigned supreme as they deserved, for taking them all in all, for fineness of touch, broad and level shoulders, muscular backs and rumps, and 'legs of mutton,' they were certainly pictures to look on, and the £50 award spoke for itself."

These sheep were 32 months and 2 weeks old, and the weight of the pen 6 cwt. 1 qr. 25lb. The Judges at the Smithfield Club Show were Messrs. H. Hart, Beddingham, Sussex; H. Luger, Ingham, Suffolk; and R. H. Masfen, Pondeford, Staffordshire, who thus speak to the merits of this entry: "A pen of extraordinary sheep"—"Such sheep! Good looks, or rather expressive, almost amounting to intelligence, nearly perfect, uniform in every respect, and I think the best pen of sheep ever sent from Merton to the Smithfield Show"—"They cantered away from the rest. Upon this the Judges were unanimous." Mr. Woods, Lord Walsingham's steward, also supplied the following particulars for the Club Report: "In the champion pen one of the three was by the highly-commended shearling ram at the Plymouth Royal meeting, and therefore half-brother to the Cup wethers of 1867; another was by the 2nd prize York ram, and therefore equally akin to the Cup wethers of 1864; and the third by the 1st prize two-shear ram at Bury, the sire of the Smithfield Club and Liverpool Cup wethers of last year."

PLATE VI.

FOXES *versus* RABBITS.

The day, I believe, is not far distant when the Legislature will seek to more strictly enforce the principle as to rabbits not being game, but in the interim a deal may be done by talking about it. Many landlords have, to their honour, voluntarily given up their claim to these pests of the farm, now that they know the great injury they cause, and others will have to follow so good a lead. The weak place, so far as England is concerned, is no doubt

in the House of Commons; as only look at the front "the Farmers' Friends" have lately offered there. Mr. Green has spoken in the highest possible terms of that Police-Gamekeeper Act; Mr. Newdegate has mourned over the calumnies in circulation against game-preserving, and Colonel Brise said farmers were fond of sport. But not one of them denounced the hares and rabbits; for, as Lord Granville says, "none of the county

members come within a hundred miles of such a question, and he only feared lest he should be regarded as occupying the position of the fool who rushed in where angels feared to tread." But these angels will most assuredly have to try their footing here, or it will get very hot for them hereafter; and when we find men like Lord Granville himself and Sir George Wombwell speaking out so strongly, we may be well warranted in looking about for more like them. And, then, as to the fox-killer, show

him up whenever you have a chance, as the Berkshire yeoman did the Gentleman-in-Waiting at Windsor, or cut him dead as the parson of the parish did; for no man who assassinates a fox can be ever worth knowing. And bear in mind, while these little wretches, the rabbits, are multiplying exceedingly, foxes in certain parts are getting very scarce.—From a Paper read by HENRY CORBET, at the Farmers' Club.

THE MOISTURE IN DRY SOILS AND CLIMATES.

BY CUTHBERT W. JOHNSON, F.R.S.

There are few important questions more interesting to the agriculturist than the moisture of his soils. There are, indeed, hardly any lands in which the supply of their watery portion may not be so altered as to materially increase their produce. Take, for instance, our grass lands—compare the lands of the grass growing counties of the west of England with a yearly average rainfall of 40 inches (equal to 4,000 tons per acre), with similar soils of our far drier eastern counties, where grass lands are found only in a very limited proportion, and where the annual rainfall is only about 20 inches, or 2,000 tons of water per acre; and then ask if there is any reason for this difference in the proportion of grass lands, except the widely different supply of moisture? And again, why do the great irrigators, who hold their farms on our great chalk formation, so carefully avail themselves of the brilliant springs which arise in that well farmed district? The water they employ on their noble water meads is free from organic matter, its chief constituent is carbonate of lime (about 20 grains in the gallon); but on a chalk soil this we can hardly consider to be a manure; and yet these springs, as soon as they arise from the earth, are found to spread fertility over large districts of, otherwise, inferior pastures. Then again, why do we in Croydon in our sewage irrigated meads find that our Italian rye grass will not yield its maximum amount of grass (say about 80 tons, or more, per annum) without we keep the land in a certain degree of moisture—viz., by yearly applying from 3,000 to 6,000 tons of sewage, equal to a rainfall of from 30 to 60 inches per acre? They would hardly need so copious a supply of liquid manure for the sake of its organic matters, in fact, hardly any amount of the richest manure would induce such a growth of grass as is here raised by the sewage.

The question, so important to all landholders, has not escaped the attention of the Royal Agricultural Society of England. This great association (we may proudly feel the greatest agricultural society in existence), has directed its attention to one of the most important branches of the inquiry, viz., "The retention of moisture in the soil of arable soils in dry climates," and for a valuable essay on this subject they have awarded a prize to Mr. Robert Vallentine, of Burcott (*Jour. Roy. Ag. Soc.*, 2nd series, vol. v., p. 336). The question on which our author has so well and so practically written, is, I opine, hardly exhausted by the conditions of the Society. It might well, I incline to think, be extended to include the *absorption* as well as the retention of the atmospheric moisture. Nature (ever in a good humour to instruct the farmer) here again lends her aid. She shows him, that the *insensible* watery vapour of the atmosphere is not deposited on all his lands alike—for instance, the dew, so valuable to his crops on dry soils and counties, is not found on all portions of

his farm in equal amount; near the sea for instance, or adjoining rivers, the insensible moisture in the atmosphere is more considerable, and the deposit of dew in their neighbourhood more extensive than on fields not very far removed. Even in the broiling climate of India, where at certain times dew is almost unknown, even there, during every night dew is found near to running waters. We may here pause to remind ourselves, that in our dry eastern corn-growing counties the farmer notices that, near the sea and near to certain rivers, his crops of wheat are, in general, of rather superior value.

Now, it is the insensible moisture to which it may be useful to direct our inquiry. And it may chance that the result will suggest some experimental examinations not unlikely to produce profitable results. First, let us briefly pause to remember the proportion of the water always present in the air we breathe. On the very threshold of our inquiry a startling fact presents itself, the *varying amount* of this insensible watery vapour, and (what looks very little indeed like a *chance arrangement*) the extent of that moisture is by far the greatest when other sources of supply to vegetation are not present, and our crops need it the most. Let us carefully note the result of the examinations of the atmospheric vapour, made at the Royal Observatory, at Greenwich, by Mr. J. H. Belville (*Manual of Thermometer*, p. 19).

The mean amount of insensible moisture in a cubic foot of the atmosphere at 9 a.m. and 3 p.m. is given in the following table in grains; it is the result of observations during seven years.

	9 a.m.	3 p.m.
January	2.70	3.84
February	3.58	2.72
March	2.77	2.85
April	3.26	3.37
May	4.02	4.06
June	4.71	4.78
July	5.07	5.26
August	5.00	5.07
September	4.66	4.77
October	3.96	4.01
November	3.27	3.43
December	2.78	2.89

The reader will here remark how, by Creative beneficence, the amount of the insensible moisture of the air, of which our crops so copiously avail themselves, is about twice as much in June, July, and August as in the winter months; so that in summer, when the other sources of supply of moisture to plant are commonly withheld, this is increased.

And again, not only is there this insensible moisture placed in the atmosphere, but there is contained in all soils, however poor and however *apparently* devoid of any moisture, the power of absorbing moisture from the air.

And what Davy long since proved (*Elem. Agri. Chem.*, p. 183), this power *increases* with the *value* of the soil. He remarked truly enough that, after having examined many soils, he had found that the extent of atmospheric moisture they absorbed was ever the greatest in the richest lands; so that he thought it was one good method of judging of the productiveness of a soil. Thus he found that 1,000 parts of a celebrated soil from East Lothian, when first dried in a temperature of 212 deg., and then placed in an atmosphere saturated with moisture at a temperature of 62 deg., gained 18 grains.

1,000 parts of a fertile soil from the valley of the Parret gained 16 grains.

1,000 grains of a soil from Mersea, in Essex, worth 45s. an acre, gained 13 grains.

1,000 grains of a coarse sand, worth 15s. an acre, gained only 8 grains.

1,000 grains of the soil of Bagahot Heath gained only 3 grains.

This absorbent power of our soils is apparently ever in action; for I never found any soils (after even the longest absence of rain) but what contained a certain amount of moisture. To give the result of only some experiments: It was on the 6th of August, in 1864, that, having noticed how well the crops, the timber-trees, and the shrubs seemed to withstand the very dry weather, I made the following experiments, to ascertain the amount of water present in the dry soils around my house at Croydon. When these specimens were taken, there had been scarcely any rain for several weeks, only 0.43 of an inch of rain having fallen at Croydon in the previous July, and not any in August till the specimens of different soils were collected; and it is remarkable that during five or six weeks, from July 1 to August 6, there were not more than four or five nights that any dew fell. The eight specimens I examined were as follows: No. 1 was a black, gravelly soil, from immediately under the turf of an old park. This soil is about 5 inches in depth, resting upon a bed of coarse gravel about 4 feet thick. No. 2 was from a bank of the Isle of Thanet sand, planted with young timber-trees. No. 3 was from the chalk soil of an old pasture, immediately below the turf. No. 4 was from a kitchen garden whose soil is the Isle of Thanet sand: this specimen was taken from the surface of a bed on which Regent potatoes were growing. No. 5 was from the soil of the same bed, taken 9 inches from the surface. No. 6 was blowing sand taken from some excavations near the East Croydon station. No. 7 was from a field of the London basin clay. No. 8 was from a bed of black sandy gravel, copiously dressed with cocoa-nut fibre. Equal weights of these soils were carefully pulverized, and exposed for some hours to a heat of 212 deg. Upon again being weighed, they had all lost weight; and calculating that the weight of an acre of soil 10 inches deep is equal to 1,000 tons, then the amount of water contained in these soils (all in appearance quite devoid of moisture) was equal, in these experiments—No. 1, soil under turf, to about 20 tons of water per acre; No. 2, Thanet sand, 10 tons; No. 3, chalk soil, 5 tons; No. 4, potato soil, from surface, 5 tons; No. 5, same soil, nine inches from the surface, 30 tons; No. 6, blowing sand, 7½ tons; No. 7, London clay, pulverized, 40 tons; No. 8, cocoa-nut fibre and soil, 41 tons. At the time these experiments were made there had hardly been any rain for forty days. From the 29th of June till the 6th of August it only rained on eight days; and the total amount of rain-water during that time was only fifty-five tons per acre, or on an average about seven tons of water each day that any rain fell. These showers merely moistened the surface of the ground, and were speedily dried off. The water, therefore, which remained in the soils when I examined them would apparently only have been

maintained by their absorption of the watery vapour of the atmosphere.

And as I have in another place had occasion to remark, when speaking of the absorption of the watery vapour by our soils, we must not forget that this deposition of water is not confined to the *surface* of the soil. Wherever the atmospheric air can freely penetrate, there the deposition of the dew, under favourable circumstances, takes place. This also often occurs in the interior of the soil, when evaporation is taking place from the surface. The amount of the dew deposited upon the soil has been estimated by Dr. Dalton to be equal to five inches per annum, or about 500 tons of water per acre. Less dew is usually formed during the first than in the second portion of the night. The amount of water deposited in dew varies at different seasons and localities. Autumn, as Mr. Steinmütz observes, is remarkable for its heavy dews, owing to the depression of the temperature during the nights. These are sometimes so abundant as to admit of measurement in the rain-gauge. In one night, towards the end of September, Luke Howard got one-hundredth of an inch of water from the dew, and in the last six days of October eleven-hundredths from copious dews and mists. We must not then forget that dew is only one form in which the aqueous vapour of the atmosphere is deposited on the earth for the service of vegetation. We have seen that when soils are dried in a temperature of 212 deg., and exposed on their surfaces to air saturated with moisture, they absorb very considerable portions of water. Suppose a soil which weighs about 1,000 tons per acre is pulverized so as to be freely permeable by the atmosphere, and that such a soil, after being thoroughly dried, is exposed to the air, then we find from the experiments of Schubler that it will absorb water, in 24 hours (being a still greater amount than in the trials of Davy)—

If a sandy clay, equal to.....	26 tons.
If a loamy clay, "	30 "
If a stiff clay, "	36 "
If a garden mould, "	45 "

We may conclude, then, that the more deeply a soil is pulverized, the more copious will, in certain states of the atmosphere, be the supply of moisture from the air; and let us not forget that this deposition is commonly in warm weather greater *under* the surface than on the surface of the land, simply because it is the cooler portion of the soil. To give an instance, when (at Croydon) at 9 o'clock in the morning of the 7th of June, 1869, the temperature of the air in the shade, on a northern aspect, was 78 degs., at a depth of 12 inches the earth was only 53 degs. At Chiswick, when the air was 78 degs., the earth was 68 degs. On the 5th of July, when at Croydon the thermometer indicated 78 degs. in the air, it was only 55 degs. at 12 inches in the earth. On the same day at Chiswick, when the temperature of the air was 80 degs. that of the earth at 12 inches was 68 degs.

We may well then concur with Mr. Vallentine when at the commencement of his essay he remarks:

"The most essential step towards causing the retention of moisture in arable land is to obtain a good depth of well-cultivated soil. All clay soils, and all such as rest upon clay or have a hard impervious pan or subsoil within a few inches of the surface, require, in the first place, *draining*, which must be followed by deep cultivation of some sort when the ground is sufficiently dry to crumble into pieces.

"It certainly at first sight appears paradoxical to speak of draining land as a means of enabling it to retain moisture; but when the various effects which drainage has upon land are duly considered, there is no real absurdity in the matter. Without considering it necessary to enter fully into the theory and practice of

drainage, I must mention a few leading points on the advantages of draining all impervious subsoils.

"The great object of draining is to relieve the soil of an excess of moisture, so as to allow rain-water to filter through the land instead of standing too long, or running over the surface. A good deal of land when being drained is found to have a comparatively dry subsoil to what the surface has, and so dense as to prevent water readily passing through it. After draining, however, air passages are formed, and water follows at once, when there is any pressure from the surface. Thoroughly drained, well-cultivated land allows any excess of moisture to pass away during wet periods, whilst it also has the power of retaining a store of moisture for periods of drought.

"All ordinary root crops thrive best with a good supply of moisture, and even oats and barley not unfrequently suffer from drought. The best naturally fertile soils are of such a texture that they require no artificial draining, and seldom become either too wet or too dry. Light sandy soils, on the other hand, have too much natural drainage, and are chiefly a trouble from retaining too little moisture. Clay loams by drainage and superior cultivation are rendered well adapted for root crops, though such soils at one time were considered quite unsuitable for them.

"After the drainage of such land as requires it, the next most important step for retaining moisture is *deep-cultivation*. Whether this may be accomplished by steam or horse power is immaterial, so that the operations are carried on at the proper time, when the soil is dry, or comparatively so. To manage this always is next to impossible; but to be able to do so generally requires no more than a full strength of horses or steam properly applied. The labour of the farm must always be kept well forward."

"Presuming," Mr. Vallentine adds, "that a farm is in such a state of cleanliness that there is no real mass of couch anywhere, autumn ploughing should be as deep as the nature of the soil will admit of. If the subsoil is very poor or stubborn, subsoil ploughing, or stirring, is preferable to a very deep furrow, which would bring too much inferior soil to the surface. Subsoiling always does good if the land is quite dry, or at least dry enough to crumble to pieces as the plough works through it. Like every other operation, however, subsoiling may be attempted at a wrong time, and mischief naturally follows. I have erred in this way more than once, and have seen frequent instances of failure resulting from subsoiling when the land was too wet, and after being cut up by the share, fall closely down again and made a mess of by the horses' feet. Land can seldom be suited for subsoiling after the middle of November, and not often so late in the season as this. Yet how many have continued this work during the whole winter?"

"With a good strength upon a farm, one field might be subsoil-ploughed every ordinary autumn, until the whole of the arable land has been stirred to a depth of at least a foot. After this the depth of the surface furrow should be increased gradually at every rotation for green cropping. It is quite an exception for land to be ploughed deeper than from four to five inches. Now, instead of this, if the soil be deepened to eight inches by degrees, the increase power it will have for *retaining moisture* will be very great, and the chance of obtaining heavy crops of all kinds increased in like proportion. It must, however, be assumed that the due manuring of the land must also be attended to.

"Autumn dunging for green crops on all clay soils or stiff loams is also much to be recommended. All soils dunged in autumn or winter retain moisture better for use in dry weather than such as are undunged. Indeed, there

are some soils so very retentive of moisture, after winter manuring, that it would be better avoided, especially if the land contains any couch which requires getting out in spring. Any good system may be abused at times, and there is nothing much worse than dunging foul land at any time. There are many good plans carried out systematically, such as subsoil ploughing, deep ordinary ploughing, dunging in autumn, &c., when every circumstance is suitable; but on the other hand, any of these operations may be carried on improperly, loss, coupled with disappointment, being the natural result.

"Light sandy soils, and all such as are usually known by the name of light soils, should not, I think, be dunged in winter. I have seen better crops of roots grown after dunging in June than after autumn dunged land, the weight of dung applied in both cases being the same."

The cultivation of turnips on the flat and on the ridge systems, in their relation to the moisture of the soil, did not escape Mr. Vallentine's attention. He remarks: "It has frequently been a matter of discussion whether turnips should be grown *on ridges*, or on the *flat surface*. I think it would be useless to attempt to enter largely upon this subject. On dry sandy soils, in dry climates, moisture is certainly retained better by sowing on the *flat* than on *high ridges*. A great deal depends upon how the various operations are conducted. By slovenly, or at least by dilatory turnip-growers, more moisture is allowed to escape during the preparation and sowing of turnips upon the *flat*, than is lost by a better course of management when the cultivation is on the *ridge* system. The ridges may generally be so rolled down as to be nearly meeting, with a depression between them of only a few inches. In such case there is little more chance for moisture to escape than by the flat system. The ridge system allows the manure to be placed more directly under the seed than by the broad-cast method. It also allows of a much cheaper and more efficient system of cultivation. However important a root crop may be, it is not more so than that the land should be thoroughly cleaned, well stirred, and completely cultivated during the growth of the crop which is to be the foundation, and, by good cultivation, the very ground-work of three or four crops afterwards. When roots are grown on the *flat*, no deep cultivation can take place. A mere surface-scratching is about all that can be done, or at least all that is generally done. Where the *flat* system of growing roots is adopted, the land is seldom kept so clean through a rotation of crops, as where ridging prevails. Many people contend that heavier crops *may* be grown on the flat than on ridges; still, it is well known that heavier crops have generally *been* grown on ridges when the system has been properly carried out."

I am not aware of any extensive experiments that have hitherto been made, as to the effect produced on the absorbing or retaining power of a soil for moisture, by dressing it with certain deliquescent salts. Every gardener is aware that if he dresses the surface of his asparagus or cabbage beds with common salt (especially if with that made from sea water), then the surface of the soil is, for a considerable time, more moist than the adjoining unsalted beds. Whether, too, the spray of the sea carried on to the lands adjoining the shore may not produce some portion of the beneficial influence to which I have before alluded, in the case of sea shore farms, is worthy of our serious attention. It is very certain that other saline matters, such as the nitrate of lime and the chloride of lime, possess far more powerful deliquescent properties than common salt; and the chloride of lime must be obtainable in the waste of the calico bleacher to a very large extent, and at a very reasonable rate.

Some years have now elapsed since I found that when

1,000 parts of the rich soil of a field in Essex, 12 miles from the sea, previously dried in a temperature of 212 degs., when exposed to air saturated with moisture gained in three hours 27 parts; 1,000 parts of the soil of an adjoining portion of the same field, which had been dressed with 12 bushels of salt per acre, gained 27 parts. In the same period

1,000 parts of some refuse marine salt gained	40½ parts.
1,000 parts soot	39 "
1,000 of horse-dung (dried at 100 degs.)	145 "
1,000 of cow-dung	130 "
1,000 of pig-dung	190 "
1,000 of sheep-dung	81 "

These examinations, imperfect as they are, may lead to other and far more valuable researches. We have been

reminded as we have travelled together through this little paper, what great things have been accomplished in the regulation of the supply of moisture to our grass and other lands. Such successes may well prompt us to believe that not only is the addition to and the preservation of that moisture in our arable soils far more within our power than we are generally inclined to believe, but that such additions to their fertility will in all reasonable probability be at no distant day profitably accomplished.

For a long series of years I have most carefully avoided making disparaging personal remarks, or entering into any public controversy; and this must explain to the Rev. H. Moule why I respectfully abstain from remarking upon his temperately written note in the *Mark Lane Express* of the 24th of January, in which he very naturally expresses his admiration of the earth closet system.

DAIRY FARMING.

BY THE NORTHERN FARMER.

Introductory.—In the United Kingdom the dairy occupies an exceedingly prominent and important position, and is a branch of industry well suited to both the climate and soil of many districts of the country, as well as to the means and requirements of the farmers who make it a leading branch of business. Mildness and humidity of climate, and fertility of soil, are essential requisites for profitable dairy farming, the former being eminently conducive to the health and well-doing of the best and most useful breeds of cattle, while the latter is indispensable for providing a full bite of succulent herbage for the summer months, and for raising those root crops in sufficient abundance which are to provide food for winter and spring.

To the small farmer of limited means a dairy offers many inducements, even apart from favourable conditions of climate, soil, and facility for the disposal of his produce. Capital invested in agriculture being for the most part locked up for some considerable time, it is difficult for the needy or struggling man ever to attain anything but a very moderate degree of success, if indeed he can get on at all by even the most untiring industry. When, however, a portion of his small capital is invested in the purchase of milking stock, and a part of the farm laid out to suit them, the return is immediate, and from this source money is conveniently got to meet the weekly payments for labour, house, and other incidental expenses, much inconvenience being thus escaped which would be altogether unavoidable in the case of having to wait for the ripening of the cereals.

It is highly necessary in establishing a dairy to take into very careful consideration the class of animals that will suit the farm, it being much better to get them of a size rather under than over the capabilities of the soil, as in that case improvement will begin at once; whereas, if the opposite has been the case, the stock must recede. This rule applies to all the breeds and varieties of the domestic animals; and its recognition in purchasing breeding stock will not fail of bringing about most successful results. A man possessed of large capital can easily place on his land animals of immense bone and substance, and of the most approved breeds; but he cannot so easily alter the character of his soil, and make it fit to carry such cattle; that must be a work of time, however great may be the expenditure with the view of improvement; and, consequently, it becomes good sound policy to keep both stock and soil progressing in the same ratio. If the dairy is to be the leading source of profit, and its

produce in the utmost obtainable quantity the sole object, independent of all other considerations, a breed of cattle should be selected famed for its large milking capacity, no animal being retained in the stock, which, after a fair trial, has been proved to be a poor milker, her produce not paying for keep and attendance. On the other hand, when milk and butter do not take first place, the rearing of young cattle being carefully attended to as a source of revenue, a more valuable breed will be desirable, one which reaches maturity at an early age, so that in whatever condition the animals are sold off the farm, whether as stores or fit for the butcher, they may bring remunerative prices.

For a purely milking dairy, and more especially on soils of light or medium quality, the Ayrshire can scarcely be excelled. This breed is characterized by hardiness and activity, the cows keeping themselves in good condition, and giving a large quantity of milk in proportion to the consumption of food. The most serious objection to keeping large-framed cattle on land light of surface, is the tendency they have to lose flesh while milking largely; the actual loss in money value of the animal herself, being little more than met by the whole season's produce. The Ayrshire is just constituted to meet this difficulty, her compact and tidy frame being easily kept up; her coat is always shiny and healthy looking, unless positively starved outright, and the close of the season invariably finds her in blooming condition. For the combined dairy no cross need be desired better than that between a Short-horn bull and Ayrshire cow, both animals being pure specimens of the breed which they represent. The stock thus bred are exceedingly valuable for every purpose, as they inherit the large milking capability of the one parent and the fattening properties of the other. In every case where the object of the farmer is two-fold, the herd should be sufficiently well bred to permit of the way-going animals to be fattened and cleared off at the age of two years, so that the permanent stock of milkers may be interfered with as little as possible, and a full bite preserved for them. The very fact of the breeder having it in his power to do this by the use of first-class male animals, ought to be one of the strongest inducements to his keeping only the best, and utterly ignoring those which are cross-bred. Pure breeding we thus find tends largely to economy of food, by conducting to early maturity; and materially quickens the return of capital. A heifer or bullock, the sire of which was pure-bred, will in general bring as much money at the age

of two years as could be obtained for it a year later had both parents been cross-bred. If it suits to clear off the young spare stock only in store condition, the superiority is quite as marked, proportionately large prices being received according to quality, and, moreover, they are always saleable. On dairy farms, where the cattle are carefully bred, with a view more especially to the profitable production of milk, and where it is not convenient to feed the spare stock, very good results may be obtained by rearing the heifer calves only, retaining them on the farm until they have milked two seasons, and then disposing of them as they approach their third calving time. Being now in their very prime they can easily be sold at remunerative prices, well repaying their breeder for his skill and trouble. And if the possession of merely young animals gives a little more trouble, and scarcely perhaps such a large annual return, yet the high price received on the average for the off-going stock amply makes up for the difference. When this mode is followed there are never any aged cows to weed out, which must be sold for a few pounds, the loss in value making a serious inroad on the animals' produce for the previous season. Being successful in obtaining big prices affords much encouragement to rear as many calves as circumstances will permit, and acts as a powerful inducement to breed carefully, and get a name for turning out thriving beasts, good specimens of the breed to which they belong.

Selection of a Bull.—The surprising influence for good which the male of pure descent, whatever the breed, exercises on the quality and character of the future offspring being now well understood, no effort should be spared to procure purely-bred bulls, and on no consideration should a cross-bred animal be used. The extra price is not worth a thought, as by the time the progeny of the pure-bred bull have reached the age of twelve months they will have paid not only the difference between the pure and the cross but the entire value of their sire, and that without either extra feeding or attention. No difficulty need be experienced in getting breeding animals of the right stamp, as they are pretty equally distributed; but should it happen that a little trouble is necessary, it should be cheerfully undertaken. No amount of care will make up for want of breeding; and it is most unpleasant for those in attendance to be putting good food in bad skins, knowing, as they well do, that the results to their employer can never be anything but unsatisfactory. When the stock are crossed, no home-bred bull should be used on any pretence whatever, however well-looking he may be; however compact in frame, or hardy of constitution; or however well descended he may happen to be from animals of rare milking property—all should be overlooked, and the beast got rid of, as if used the stock will recede instead of progressing. Breeding from cross-bred bulls destroys uniformity; the cows become unshapely, losing the fine level back, finely sprung rib, and general squareness of body, which are so eminently the characteristics of purely-bred cattle. They are also much larger consumers of food—a consideration no one can afford to overlook—very soon after passing their prime, getting a raggedly and uneven appearance, and requiring a very large amount of food to keep them at all in decent condition. At the present day there is no difficulty in procuring young Shorthorn bulls of pure descent, and at prices within the reach of men of very moderate means indeed. This blood being now so universally diffused over the kingdom, and possessed by those who have the good sense neither to pamper nor over-feed, rearing their young stock in exactly the same way as they are likely to be treated by those who purchase them for breeding purposes, a great boon has been conferred on all stock farmers of limited capital. Bulls reared in this way are not only

to be had for far less money than those which have been pampered, but they also turn out to be far more useful, being really serviceable animals for the purpose for which they are wanted, and their progeny healthy and thriving. To sum up this part of a very important and interesting subject, we consider that a better foundation, or starting point, for profitable dairy farming can scarcely be attained than that which begins with the Ayrshire cow and Shorthorn bull. In uplands, where the pasture is but indifferent, and situation exposed and unsheltered, the Shorthorn is then inadmissible, the pure Ayrshire giving more profitable results.

Treatment of the Calf.—A considerable expenditure of time, trouble, and money having been gone to in procuring good blood, the offspring becomes valuable before it has seen the light; and it therefore becomes well worth while to bestow much care on the cows during the months of gestation, removing as much as possible all disturbing influences, so that the calf may come to the world healthy and full-timed. When the breed is valuable, much loss is too frequently experienced from premature births, as from whatever cause it begins in the herd, it seldom ceases without a considerable number of the cows slinking, there being an apparent, though hitherto unexplained sympathy amongst a number of breeding cows, the conditions of whose daily life is exactly similar. Regularity of feeding, good ventilation, and abundant room, not only in the stalls, but in the width of the doors, so that there need be no crushing as they go in and out, are all excellent preventives of abortion. Musty hay or straw, more particularly barley-straw in almost any condition, given as food to in-calf cows, is provocative of slinking, and should be avoided, as also the giving of a quantity of cold roots as the first feed in the morning (frosted turnips are particularly objectionable), a little sweet hay or fresh oat straw being safest for the morning feed, and accidents less likely to occur by such an arrangement. The calf having been brought into the world healthy, the great aim should be to keep it so, and this can in general be successfully done by providing it with comfortable quarters, and feeding moderately at regular intervals. When the disposal of dairy produce is more the object than stock-rearing, the latter being subordinate to the former, and the calf consequently intended to be brought up by hand, it should, to save trouble, be removed from the mother the moment she has licked it dry. It should not be permitted to suck even once, and the instincts of mother and offspring never having been aroused, they have no knowledge of each other, and much annoyance is thereby avoided. Although in theory it may seem to serve several useful purposes to permit of the calf sucking its dam for a day or two, yet the trouble afterwards is so great in getting the one to let down her milk, and the other to drink out of the pail, that the good which might be expected to result from doing so becomes quite neutralized. The beatings can be quite as easily given by hand as by suckling, and are in this way quite as effectual in clearing the stomach and intestines, and establishing that healthy action so vitally necessary for the very existence of the creature so recently come into the world. When the calf has never been permitted to suck its mother there is not the slightest trouble in getting it to drink out of the pail—hunger will make it do so; whereas if it has sucked at all, it shows the greatest obstinacy in learning, and cannot be got to drink freely until a considerable time has elapsed. With the cow herself there is also some trouble, and very often positive danger from retention of the milk when she has taken kindly to the calf, and her maternal instincts thoroughly aroused. For several days she will scarcely let down her milk at all, rendering it almost impossible to milk her clean, and, from this reason alone, severe inflammation is

liable to set in, resulting, not only in a great deal of temporary inconvenience, but actual monetary loss. Should the swelling become hard, and not yield to repeated and long-continued fomentation with hot water, the following mixture forms probably as good an ointment as could be used for soothing the pain, and reducing the inflammation. Camphor, 1 oz., rubbed down with a little spirits of wine, and well mixed with 1oz. of mercurial ointment, and $\frac{1}{2}$ lb. of elder ointment. This should be rubbed well in after each milking, but clean washed off with warm water before being again milked. To the owner of a large stock of cows, the above receipt is very valuable, and a few pots should be kept ready mixed for use. A number of cows in a herd with blind paps is most unsightly; besides being a pecuniary loss by injuring the milking qualities, and lessening the value of each animal so blemished when parted with; and moreover it is not creditable, and therefore the utmost care should be taken to keep down inflammation at the period of calving. If at all possible the calf-house should be subdivided, so that each little animal can have a separate compartment for itself—an arrangement which adds most materially to its comfort and progress, and through which much after trouble and many losses from death can be avoided. To give the calf a good start, and lay the foundation of a good constitution, the milk should be given undiluted and warm from the cow for the first fortnight, the third and fourth weeks half new and half skim; afterwards the skim itself will answer admirably, and as the season advances the thickened milk does equally well. When given in sufficient quantity, coagulated milk fattens amazingly, many lots of calves so fed being fit for the butcher when turned out to shift for themselves. The most dangerous and insidious disease to which young and rapidly-thriving animals are subject is black-quarter, which, when it breaks out, very frequently commits sad havoc before it can be checked, making the loss very serious when the cattle are particularly well bred. It gives so little warning that remedial measures are usually of little avail, and therefore on those pastures liable to its periodical appearance amongst the young stock whatever can be done in the way of prevention should on no account be neglected. Dry-lying in the field is essential as a preventive, and care not to shift too suddenly from moderate keep to rich and succulent pastures, as blood-striking is almost sure to follow. A seton in the dewlap is strongly recommended by many distinguished veterinarians, and as we have ourselves often tried it, and lost none when the precaution has been used, we consider it worth while recording the mode of using it. So as to render the cord more irritating it should be made specially for the purpose, with one-half hemp and the other half horse-hair, and in substance about the thickness of ordinary fencing-wire. When thus made, the seton does not require to be rubbed with Venice turpentine or cantharides ointment, the irritation which it induces being quite enough for the purpose required. In inserting the seton a little care is necessary to avoid the blood-vessels, which can be done by taking the dewlap between the finger and thumb, and ascertaining the exact point at which the flesh terminates, underneath which the puncture should be made and the cord introduced, a couple of tight knots being put on each end to prevent its slipping out. At intervals the cords should be examined, and drawn back and forward with some degree of force to prevent clogging and assist the discharge. As we have already noticed, damp bottoms are a fruitful source of black-quarter, and according as they are rendered dry by drainage, this dire disease becomes less frequent in its attacks, and of a milder and less fatal type. In situations difficult of improvement housing by night should be resorted to very early in autumn, so as to obviate as much

as possible the injurious effects of the damp soil and chilling frosty dews.

The Supply of Food.—As the cow is fed so will her produce be greater or less, profitable or otherwise, is an axiom pretty well known to most people whose business is amongst dairy stock. Yet notwithstanding this, there cannot be a doubt in the mind of even a very superficial observer, that there are many owners of milking cattle who act as if the contrary were the case, and that it was of comparatively little importance whether the food given was up to the mark in either quantity or quality. Too frequently but little winter food is prepared, and the poor animals have to drag out a cheerless existence on whatever rough grass they may be able to gather from the pastures they occupied in summer, with the addition of a little straw or coarse hay when in the house; the modicum of turnips or mangolds grown being reserved for advanced spring, when the cows are at or near the calving. By the time they drop their calves, the cows thus treated are so reduced in condition as to render them quite unfit for giving a full season's milk, so much of the food supplied having to go to the nourishment of an enfeebled system, and to repair the waste of tissue caused by a lengthened period of semi-starvation. Now such treatment is the very reverse of the teachings of reason and common sense, as the cow being an animal than which there is none more grateful for liberal treatment, or gives a more overflowing return, arrangements should be made for an abundant supply of nourishing and succulent food during all seasons, so that each and every member of the herd shall have enough to eat every day in the year. Without full feeding no cow, however good may be her milking qualities, will remain long in full profit; therefore, keeping her on a short-supply of food is just so much lost time, and loss of income to her owner. If, from unforeseen causes, food happens to be scarce at the calving season, it is better policy to sell a few of the cows and so be enabled to feed those well which are retained, than endeavour by pinching to keep all on, and endanger the entire season's produce by prematurely drying the flow of milk; a result inevitable if the food is limited at the period of calving. Nay, so important is it that there should not be the slightest approach to hunger, or even restriction, that with the money so obtained, if cash is not obtainable in any other way, it is better to purchase food, whether in the shape of grains, oilcake, turnips, or hay, and by supplementing the home-grown food stretch it so far as to give a full supply until the season has become sufficiently advanced, and it can be procured in other ways on the farm. During the summer months the pastures are of course the principal dependence for dairy stock, and on soils remarkable for fertility nothing else is required, and summer-house feeding is unknown, large-framed splendid cattle being kept in blooming condition and in full profit on grass alone. Very different, however, is the case of the farmer who farms on a medium soil, the grass of which gets burned up when overtaken by a lengthened drought, as if he has not provided supplementary food, his cattle cannot possibly give a profitable return, falling rapidly off both in produce and condition. Growing a few successive breadths of green food to be given in the house at the morning and evening milking pays well, as it not only increases the flow of milk for the time being, but keeps it up till a much more advanced period of the season than is the case when the cows have to subsist on the pastures alone. The large quantity of manure made by the partial house-feeding system is another source of profit, as it gives the farmer the means of sustaining the fertility of his land, making it in fact self-supporting, but little money being required to be spent on fertilisers of any kind when substantial farm-yard manure of the best sort is manufactured so extensively. At one time we supposed that it

was an impossibility, even with the utmost care and forethought, to provide such a regular supply as would ensure a hearty feed twice a day from the time the roots were finished in May, until again available in September; but a neighbour of our own has shown the fallacy of that idea by keeping a stock of about fifty head for the past seven or eight years without letting them into the fields even for a single night during the entire year. Tares, irrigated grass, and second-crop clover are his principal dependences for house food; and so well does he manage that he has every beast fat, from the youngest-calved heifer to the oldest cow. Winter tares sown in September are a valuable crop, giving a large amount of food, and permitting the ground to be cleared in time for a full crop of turnips. Tares have this useful property, that however succulent, they do not scour cows fed on them, and may be given fresh from the scythe without injury; indeed, there is no way they can be given so appetizing to the animals as when newly cut. They do not so much increase the flow of milk as add to its richness, and sustains it throughout the season, the butter made being firm in texture and delicious in quality. On ordinary land tares are not worth growing for cattle-feeding purposes, unless highly manured, the crop having no bulk, and moreover runs too late in the season to be of any perceptible benefit. Much of the profit of a dairy is lost by keeping the cows out in the fields at night too far into the autumn, as they are chilled by the frosty dews, and the milk prematurely dried. This course is compulsory on those who have provided too limited a supply of food for a protracted winter, and are therefore forced to leave them out too long, and turn out in spring too early. Housing in time assists greatly to keep up the milk, and to continue it at the paying point well into the winter. It is obvious that when cows are turned out during cold wet nights in October they can little else but look for the best shelter the fences will afford, and there lie down; and a very small allowance of food given inside, will be equal to what they can collect in the fields, even when the nights are moderately fine. In October butter is getting scarce and the price rising; therefore it pays to look to the comfort of the cattle, and feed fairly both in-doors and out, if it can at all be managed, which it can be, if the necessary measures have been taken. By this kind of treatment towards the close of the season, we come to the conclusion that as much money may be made extra as to convert what otherwise would have been but a middling season into an exceedingly prosperous one. In bringing cows through the winter it is of great benefit to their health to get a run out every day for a few hours, the exercise promotes circulation, prevents swollen joints, and tends to hardness of constitution, besides improving the quality of their produce in the case of those which are milking. When dry the winter food of the in-calf cow may with great propriety consist of a morning and evening feed of roots (carefully avoiding frosted turnips) and as much oaten-straw as she will eat. This treatment regularly kept up will bring her to the calving in fine condition, enabling her to give milk in paying quantity, rich in quality, and therefore highly productive of butter. Although farmers holding rich land look upon turnip growing for dairy stock as an expensive process, and trust more to the large crops of hay they can grow than to roots; yet the upland farmer cannot in this way afford to imitate his more fortunate neighbour in doing so. Not being able to grow on light land more than half the crop of hay that the other can with perfect ease, the article becomes to him a most expensive one, and he must make green crop his main stay, the character of his soil giving him the opportunity of doing so, and rendering roots the most economical food he can raise. When calved, hay can be substituted for straw, and the quantity of roots

increased to about 100 lbs. given in three feeds, a weight of roots quite sufficient for the heaviest cow. Some attention should be given in the commencement to avoid surfeit, as serious injury to the animal may be the result of over-feeding, and in any case, if the food should be rejected for a time, the produce is liable to suffer a very serious diminution. In early spring, while the cows are still wholly dependent on house-feeding, those newly calved are exceeding grateful for the addition of a little concentrated food, in the shape of crushed oats, meal, bran, or oilcake. When mangolds are used it is absolutely imperative to give meal or crushed oats, as milk from them alone is very thin and unproductive; and again, those roots having a decided tendency to scour, the meal acts as a corrective, and the animals are kept in good health and condition. There is a striking difference between cream from the milk of merely root-fed cows and that from cows getting corn-meal or cake in addition; the one is comparatively thin and poor, while the other is thick and rich, affording ample proof of its superiority by comparison alone, before being submitted to the conclusive test of the churn.

House Accommodation.—In the stalls provision should be made to keep up such an amount of heat as will keep the inmates comfortable, care being taken that too high a temperature is not maintained, as they will sweat and be under such a constant sense of oppression as will not only keep them uncomfortable, but prove in the end injurious to their health. From 55 to 60 degrees of night heat will promote both health and comfort, and materially aid in the production of milk, none of the food being wasted by having to restore the natural heat of the system, which is dissipated by the cold temperature in which the cattle are compelled to remain. Draughts should be carefully avoided, a newly-calved cow being highly susceptible of injury from cold currents of air; and to prevent cutting draughts there is nothing so effectual as a properly-organised system of ventilation. There should on no account be any side opening underneath the level of the occupants of the stall, a mistake too often made, and the fruitful cause of much mischief. A series of minute openings, easily made in the building of the wall by the insertion of hollow bricks or even drain pipes of small bore, should extend the whole length of the building for the admission of fresh air, the outflow of that which has become vitiated being provided for by ventilators placed along the ridge of the roof, or by raising the top row of slates a few inches, which can be easily done, looks well, and answers the purpose admirably. In the division of the stalls, perfection appears to us to have been reached by the different manufacturers in iron, who make stable and cow-stall fitting a portion of their business, their models being exceedingly worthy of inspection and study by those who are about to build or remodel. They almost, without exception, combine security of fastening with safety to the animals, comfortable standing room, and excellent facility for preserving the bed clean and dry. Being rather expensive they are almost out of the reach of ordinary tenant-farmers, but with cheaper materials the style could be kept sufficiently well in view to serve the purpose.

The Dairy.—A dairy is popularly supposed to be a structure combining neatness with elegance, while at the same time it affords every possible convenience for the preservation of milk and cream until manufactured into butter. Beautiful dairies are certainly not scarce, but they are mostly in connection with the establishments of wealthy families, who take a special pride in having the dairy a model of cleanliness and good order, and fitted up with every contrivance that will save labour, and enable the dairy-maid to have everything connected with her department in first-class condition, fit at all times for inspection, besides supplying cream and butter for the

family of the very best quality. The ordinary farmer, however, is very differently situated in this respect, his dairy being too frequently a mere make-shift, in no way adapted to the purpose for which it is used: circumscribed in its limits, with low roof, damp floor, and incomplete ventilation, it is almost impossible to preserve that thorough state of cleanliness so indispensable for the production of high class butter. It is clear that an improperly constructed dairy must be most inimical to the farmer's interests, being the fruitful cause of much butter of indifferent quality, the lower price at which it must be sold taking a goodly slice off the annual receipts. For the convenience of those concerned in its management, and for the sake of having the milk removed to the vessels in which it is to be set with as little agitation as possible, and before being too much cooled, it is obvious that the milk-house should be situated conveniently to both the dwelling-house and milking-stalls. At the same time it should be completely removed from the manure heap; or if it must unavoidably be in the range of buildings which surround the cattle-yards, there should be no communication on that side, isolation so as to secure freedom from the gases evolved by the fermentation of manure being imperative. A north or north-west aspect is very suitable, and if at all practicable the ground should slope away from the dairy with so much of a fall as to render it an impossibility to have such a thing as stagnant water in its neighbourhood. It is not necessary that the erection for this purpose should be large, as space can be economised by having a double tier of shelves; therefore a somewhat long and narrow house is preferable to one which is nearly square, centre space, especially where there is a churning-room attached, not being so much an object. The floor should be laid with tiles in preference to flags, as having been submitted to the action of fire they tend to preserve that dryness of atmosphere so essential to success; while flags, however suitable they may be in other respects, attract damp, invariably sweating on the approach of rain, and continuing moist and clammy during the prevalence of wet weather. A thorough draught should be obtained, if possible, so as to keep the air pure and fresh, the taint imparted by confined air being fatal to sweetness in the products of the dairy. Openings at opposite sides ensure this when the situation permits. When, however, there are only admissible on one side, ventilators must be placed on the ridge of the roof. Instead of these openings being glazed, perforated zinc should be neatly fitted, which, admitting air and light abundantly, excludes dust, flies, and all objectionable matters which may be floating about. Wooden shutters will be found useful during high winds, and for the exclusion of frost. A hot-water pipe carried round the house is of the greatest service in winter, enabling the temperature to be regulated, so as to get the cream to rise quickly and in full quantity, extreme cold being very prejudicial to its separation from the milk. In connection with, and having a door opening into the dairy, there should be a small room for churning and washing the butter and preparing it for sale. This is a most useful addition, and should not be done without if possible, as, if the operations which should be conducted here are performed in the dairy proper, it becomes almost impossible to preserve the purity and sweetness of air so essentially requisite. The floor of this room should be so constructed as to carry off the water without stagnation, the channel which conveys it going through the wall, and then communicating with a drain. On no account should the latter open into the house by being carried underneath the wall, as, however carefully managed, foul gases will be driven back, and the air inside become vitiated in consequence. The scalding-house should have no connection whatever with the dairy or

churning-room, but should invariably be entered by a separate door.

Utensils of the Dairy.—There is very great diversity of opinion with regard to the best material for the coolers or vessels which contain the milk while it remains in the dairy, china, glass, wood, earthenware, zinc, and tinned iron having all supporters, and all having something to recommend them, either on the score of economy or usefulness. China bowls being the most ornamental, are found on the shelves of those dairies which we have already had occasion to notice; but are never seen in the possession of ordinary farmers. Glass is an excellent material for a milk-pan, and would appear from experiments which have been made to have a certain advantage over other materials, in conducing to the rising of the cream. Notwithstanding this, they do not seem to have come into such general use as might have been anticipated, probably on account of the first cost being considerable, and from a natural fear of their being easily broken; which we believe, however, is not really the case. The brown ware pan recommends itself by reason of its cheapness, and is a favourite; it is easily cleaned, and if a few breakages do occur in the season, the expense of replacing them is but trifling. Wooden coolers are also largely used, and are, probably on account of their lasting nature, the most economical of all milk vessels. When kept as they ought to be they are highly ornamental; the hoops bright as silver, and the oak scoured white as snow, affording a pleasing contrast. They have also the great advantage of preserving the natural warmth of the milk much longer in a low temperature, a quality which adds to their merit in no small degree. When temporarily out of use a little water may be placed in them, so that the hoops will not loosen, which they are apt to do in very hard dry weather. Attention to this little matter will render a well-made oak cooler almost imperishable. Shallow rather than deep vessels are the most suitable, the cream rising more quickly. This formation is exactly found in the wooden cooler as usually made; and vessels of other material which are made in the same form are best adapted for the dairy. The churn has of late years come as near perfection as it seems possible to bring it; and certainly in the hands of those accustomed to its use, the forming of the butter can be regulated to a minute, the quality of the article being superb when good sweet cream is used. It is of no advantage to bring the butter quickly, as by doing so the quantity is less and the quality inferior. To have substantial butter, firm in texture, rich in colour, and of good keeping quality, and moreover so as to extract all the butter which the cream contains, the process of churning should occupy not less than half an hour: and will frequently run on to the full hour if the temperature is rather under the mark, which is as nearly as possible 60 degrees. For ease of working and simplicity of action there is no form to equal the barrel churn, as sent out by the best English makers; and it seems by general acceptance to be the universal favourite. About 80lbs. can be easily churned by manual labour when the axle of the churn is mounted on a single little roller to ease the friction; and in practice there is not the slightest difficulty in getting the butter out of this style of churn, nor is there the slightest inconvenience experienced in cleaning it.

Management of the Cream and Butter.—Much bad butter is made by permitting the cream to stand too long before being skimmed, putrefaction having commenced, the taint of which no after manipulation can wholly remove. This is done too frequently from the mistaken notion that if skimmed too soon the whole of the cream will not have time to rise, and butter of indifferent quality is habitually made, the parties doing so arguing that what is lost in quality is gained in quantity—a species of self-deception

which results in much loss. To assist the churning process, there is no objection to the cream being soured; and the butter is in no way injured thereby, perfectly sweet cream being seldom used during summer unless for a very particular purpose. During the summer months there is some difficulty in having the temperature sufficiently low, and in consequence cold water must be brought into requisition very abundantly to reduce the cream to the proper standard. Filling the churn with cold spring-water over night, and plunging the cream crocks into large tubs of the same, saves all trouble, the butter having the firmness and consistency of that made in the autumn. So effectual is this mode of management that even where ice can be cheaply and conveniently obtained, it need seldom be used. In situations where cold spring water has to be brought a considerable distance, and is consequently very valuable, a few pounds of ice is exceedingly useful on churning days, saving a great deal of trouble, besides enabling the dairy maid to produce a first class article. The butter on being removed from the churn should be washed in the iced water until the whole of the butter-milk is expressed, which is easily known by the water running off at last clear and pure.

If the milk has been properly strained when brought in from the cow (an operation which ought on no account to be omitted) there will be no hairs or other impurities in the butter; and it is now ready for being salted. One imperial pint of salt to about twelve pounds of butter is quite enough to preserve it for any length of time that may be required; if for immediate use, half the quantity will be sufficient.

It is not at all impossible but that butter which, when taken from the churn was of superior quality, may, from imperfect salting and packing, be inferior by the time it is offered for sale. Much care should, therefore, be taken in intimately blending the salt with the butter, so that it

shall not be streaked or imperfectly mixed, any appearance of this being fatal to its fetching the top price.

It should also be firmly packed, each lump being thrown into the cask with considerable force, and further packed firm with a rammer. This has the effect of uniting the entire body of butter into a solid mass, and forcing off the brine, both important matters in promoting the keeping qualities of this extremely delicate and easily injured article. Winter-made butter, especially where the cows are supplied with a large quantity of roots, is very difficult to obtain of superior quality; yet we consider that it is not impossible to have sweet butter during the whole of that season; and that without even once recognising the unpleasant taste of turnips. This can be accomplished by putting a very small pinch of saltpetre to each pan of milk; strict cleanliness; and, above all, churning often; skimming the milk after it has stood not longer than 36 hours. Granting that a little more butter might be made by letting it stand longer, that slight loss is amply compensated by superior quality and by the greater value of the milk, which being so sweet commands a higher price than if it had stood for 24 hours longer. However tedious the process of churning may sometimes be in very cold weather, it must not be unduly hastened by the addition of warm water, as that brings out the bitter turnip taste, besides destroying the colour and texture of the butter—making it, in fact, almost worthless.

Great care is required to attain success in the management of a dairy; but if there is one thing more than another necessary, that is attention to cleanliness. Unless this point is rigidly attended to it is vain to expect success. Entire failure may not be the result of its absence in whole or in part; but the highest amount of profit, pleasure, and satisfaction which it is capable of yielding will fail to be realized.

THE IRISH LAND BILL.

For some months past we have, with what may have looked like "curious care," endeavoured to keep as clear as possible of the Irish Land Question. And we have done so under every kind of temptation to break through our reserve. Scarcely a day has passed, more especially of late, without our receiving a letter or a pamphlet on the subject, wherein the English and Irish systems of tenure have been too often mixed up in inextricable confusion, the difficulty of any adjustment only increased, and confusion rendered worse confounded. With some knowledge of the Sister Kingdom, for we have traversed it from one end to the other; and with some considerable experience of the action of Tenant Right in England, for we have tabulated every existing Custom that can be spoken to, an inclination to criticise the critics has been almost irresistible. But we have felt from the first that in this matter the two countries could not be kept too distinct, as we should have almost preferred that any discussion over the tenants' claims in England stood over until those of the Irish occupier were arranged.

It is in the outset a very manifest truism that the Irish Land Question is of so peculiar a nature as to require altogether peculiar treatment. Any proposed remedy could under no circumstances be rendered in its entirety beneficially applicable to any other part of the United Kingdom, and any consequent comparison of usage here or there becomes something worse than idle and useless. The Irish gentleman has now for generations only contrived to "live" at a gradual sacrifice of his position as a

landlord. This is a fact that we must accept not only on the word of the economist or the politician, but quite as forcibly on the evidence of the story-teller and the dramatist. His improvidence had become a proverb, his embarrassments a normal state of existence. He drew every shilling he could from his property, and then left it to the keeping of others. From such a state of things there sprang a system with which we in England have, happily, but little practical acquaintance. The absentee created the middleman, and the tenant called upon to perform the landlord's duties by the land came to acquire an interest in it far beyond what would be implied by his occupation. "In Ireland the landlord does not, as a rule, find the capital necessary for the improvement of the soil," said Mr. Gladstone, in the opening of his address the other evening, and this sentence supplies the very key to the case. We hear, with something more than a mere feeling of surprise, of the Irish farmer claiming a right to sell his good-will, of his maintaining his right to something like fixity of tenure, and so forth; and we are often enough inclined to attribute such preposterous demands to the turbulent, dissatisfied character of the people. But it is not so. The Irish tenant has long been more than a tenant. To adopt a phrase just now in fashion, his dealings with his landlord have partaken much of the nature of a co-operative movement. So far as the actual holding has been concerned he has been both landlord and tenant. He has not only cultivated the land, but he has built the house and homestead, he has

made every improvement that has been made, and so long as he has paid his rent he has remained undisturbed in possession. And from this false state of society have grown up Customs which would sound elsewhere altogether obnoxious and unwarrantable. The man refuses to be disturbed, or, if he be, he advances claims that would seem on the face of it to interfere with the rights of property. But, then, it must be remembered how much his extraordinary labours have done for that property, and how closely they have identified him with its permanent improvement.

So long as the tenant continued in possession, if only the stronger grew his hold, no great difficulty could well arise. But of late years, as the Premier tells us, emigration from Ireland has been but "another word for banishment;" while a receipt for rent in the case of many a small occupier, has had from time to time a notice to quit on the other side of the paper. The man thus lives in a perpetual state of unprofitable uncertainty and unwholesome excitement; and small must be our surprise if he become restless and disaffected. The deeper we look into this question, the more cause do we see for its consideration, and the action which the Government has taken over it. But we can happily go further. Of all the pamphlets, essays, letters or reports we have met with, we know of none to compare with the speech of Mr. Gladstone. He has seized the monster with the grasp of a statesman; and while he relieves the people, he is careful to do so at no outrage of their feelings or their habits. The remedy, as we said, is one peculiar to Ireland; but the effect will be felt further on. Where Custom is justified in its origin and beneficial in its effect, let Custom have the force of law. It is remarkable, indeed, how happily Mr. Gladstone has interpreted the *better* part of the Tenant Right principle. To establish *right* there must be *improvement*, or, as he laconically defines it, "improvement, in the first place, must add to the letting value of the land, and, in the second place, be suitable to the holding." It will be found throughout the whole of his admirable exposition how this proof of improvement is insisted on before compensation is admitted; how clearly the line is drawn between temporary and permanent improvements, and how carefully the landlord's position is guarded, as to making the more expensive outlay himself or being duly consulted before this be incurred. So far, and the Irish and English Tenant-Right would seem to be very nicely assimilated. The Irish claim, however, of course goes further, and the Ulster Custom is countenanced. By this the evicted tenant is entitled to be paid not only for his improvements, but for his good-will, and this to an English eye will look like the weak place in the fence. Through the force of such an enactment the in-comer will of necessity wrap up his talent in a napkin; he will pay so much to come in that he will only receive again

when he goes out, and hence a large proportion of his capital will remain unemployed. In fact, the payment for good-will in Ireland has precisely the same effect as the payment for acts of husbandry in certain parts of England. But the new Land Bill is keenly alive to this evil, and would free the people from it by every possible means. Instead of a yearly tenancy let the occupier have a long lease, and fairly work his own again out of the land; or with so heavy a lien already upon it, let him be encouraged to make the purchase outright. Or, on the other hand, let the landlord be assisted in buying up these now obsolete and burdensome rights, justified though they were in a bygone age when the Irish tenant, like the Australian squatter, settled himself upon and did everything for the land—but call it his own. Capricious evictions are discountenanced, if not more directly penalised, the smaller the holding the greater the protection; and security of outlay will at any rate answer for security of possession. And in this country, security of capital and security of tenure work on to precisely the same end.

So far we must be understood as speaking rather to its brilliant introduction than to the measure itself; although we have little fear but that one will be worthy of the other. The Premier's speech, more especially, may be carefully studied alike by the English and Irish agriculturist, for it is very pregnant with matter. Let, indeed, the Irish Land question be adjusted, and, so far as man can do, this would look already something like an accomplished fact, and England's turn is pretty certain to follow. We recognize this promise equally in the speech from the throne as in that of the Premier: "The measures proposed with respect to the ownership of land for the consideration of Parliament during the present Session are not exclusively contained in the present Bill. Some of them are included in other Bills, for they do not apply to Ireland alone, but to the whole kingdom. Among them will be measures for facilitating the transfer of land and for dealing with the succession in cases of intestacy, giving greater ease, liberty, and justice to the operation of the law than in its present state it can be said to possess. It is possible that there may be some other provisions analogous to these, which we may deal with during the present Session, and which will be applicable to the whole of the United Kingdom; because in reference to them we consider the circumstances of the three countries to be so analogous as to warrant our dealing with them together." So said Mr. Gladstone significantly enough on Tuesday evening; while some years since the Farmers' Club said unanimously enough that "the difficulties attending the transfer of land have generally become so many and embarrassing as to demand the serious attention of the Legislature, with a view to removing them." And further, that the first and most direct means would be "the simplification of titles and forms of conveyance."

HOP GROWING IN THE COLONIES.

Our antipodean brethren are going a-head, and are ambitious of rivalling the mother country in some of her industries; they desire, in fact, to be thoroughly independent of foreign supplies, so far at least as their labour power and the capabilities of soil and climate will permit. In excellent wool they have long shown us what they can do. They have even a superabundance of wine and wheat for export, and they are striving now might and main to supply our hungry mouths here with cheap beef and mutton, cooked and uncooked. They are even

competing with the English farmer in the production of beet-root sugar for their own consumption. The latest project is to grow hops which shall displace imported hops, and enable them to establish breweries more generally, so that Australian ale and stout may take the place of the well known drinks of Burton, London, and Dublin. All these endeavours are creditable to young States, and we wish their efforts all success; but as regards hop-growing in most of the colonies we find more in the way of theory than of practice: more of what may be done than of

what has been done. And it should be borne in mind (as experience even is proving) that the whole of the Australian colonies are no more adapted to the growth of the hop, than are the whole of the counties of England.

In Otago a conference of agriculturists was lately suggested on the subject of hop-growing, for which it is believed the climate of that province is peculiarly adapted. At Nelson hop-growing has advanced a stage further than in Otago. A brewer in that province cultivated last year 8½ acres, which produced 15,000 lbs. of hops, yielding in the local market at the current value of 3s. 6d. per lb. £2,625, or equal to £308 per acre. It is not to be expected that this price can be always obtained, but even at 2s. per lb. the result would be highly remunerative, and the latter price is the lowest at which good hops have yet been sold in New Zealand. The average import of hops to the port of Nelson from London alone during the past three years is stated at from 40,000 to 50,000 lbs., and when to these figures is added a large quantity obtained from Melbourne and Sydney, it will be seen that there is sufficient consumption to encourage a fair trial being given to this branch of agriculture. The yield and price of hops given here are both above the average, but we are not disposed to be hypercritical in such a case.

The account of what has been done with hop-growing in Victoria is not by any means encouraging. The efforts made to grow the plant in the Melbourne Botanical Gardens, under the skilful direction of Dr. Muller, do not seem to have been attended with success, which is much regretted, as Victoria pays annually over £70,000 to England, Tasmania, and America for this valuable product. But what if it should be found that there is no spot in Victoria fit for the growth of the hop to perfection? What if the climate should be found too dry and hot for this purpose? This supposition is in part negated by what we are told of hop-growing in New South Wales, where the growth of the plant is said to be most astonishing in favourable spots. "Sets" planted in September have been known to produce five cwt. per acre the following March. This was at Illawarra, almost a semi-tropical district. But as a set-off to this luxuriant production, it may be mentioned that little is ever heard of any extensive hop plantations in New South Wales, and although hop growing has been tried in South Australia, where the climate is not very dissimilar, it has not proved a commercial success. Even in Tasmania, where the climate is confessedly so well adapted to the growth of the hop, and where the hop-grounds are sheltered from the winds blowing from every point of the compass by high hills, irrigation is required, and the utmost care in every other respect to ensure success. A visit to the Tasmanian hop plantations at New Norfolk would well repay the cost and time bestowed on it by those who think of trying hop-culture in the neighbouring colonies. It is in fact to Tasmania alone that they must look for their supply of hops, as most suited in every way for their successful and profitable production.

In a few years time New Norfolk will be a most extensive hop garden, for the growers are all extending their plantations. A few practical facts connected with the system of cultivation adopted in the colony may be interesting to growers here, where the seasons are different, and where the bulk of the ground employed has been for centuries under cultivation. In Tasmania the ground to be transformed into hop gardens is almost virgin soil, and an immense amount of care is necessary in its preparation to ensure profitable crops. The hop is a slender climbing plant, which requires a very rich mellow soil and an unlimited amount of attention to ensure success; but there is no other crop known which will so well or so surely repay the

labour and capital expended. It is a maxim with successful hop growers that you cannot expend too much labour, or use too much manure on a hop garden, and a very satisfactory proof of the truth of it was afforded last season at Fenton Forest. It was thought that the owner was carrying the principle to extremes, but the result fully justified his efforts, as he picked nearly £800 worth of hops from an acre and three-quarters of land. The piece was cultivated as an experiment, and from £60 to £70 was laid out upon it last season. It was, however, an exceptional piece of land, and had been used for many years as a bedding place for cattle. The ground was thickly covered with stable dung, a few loads of guano being also used; it was then copiously irrigated and kept clean by the free use of the scarifier, the yield being slightly over 30 cwt. to the acre. Such a result ought to be a great encouragement to intending hop-growers, and is the best proof that can be given of the remunerative nature of the pursuit when properly carried on.

The soil of a hop garden must be rich in its nature, and rich to a considerable depth, or if it is not, it must be made so. The slender roots of the hop plant strike deep into the soil and creep along over the subsoil, forming a complete web, or net-work over the whole land. These roots are composed of the most delicate fibres, and the more carefully they are nourished the stronger will the plants become. In choosing ground it is necessary to examine carefully the nature of the subsoil, which must be dry and sound. A clay subsoil is unfitted for hops, and will not yield a profitable return.

The system of preparation adopted by most of the large growers at New Norfolk is as follows: The ground is ploughed two furrows deep, or from 12 to 14 inches, and care is taken to see that the land is moved equally all over its surface. The ground having been ploughed, the scarifier is brought into requisition, and it is made as fine as possible. The land is then laid out into parallel lines, either six or seven feet apart, and short sticks are set up at the same distance along the rows, so as to alternate between them, and mark the place where the sets are to be planted. Most of the plants are put in six feet apart each way, but where the ground is particularly strong seven feet should be allowed, as air and sun are indispensable to the plants; and an overgrowth of bine in a confined space would choke them and stunt the crop. In planting the sets a hole should be dug about two feet square, and this should be filled up lightly with earth dug out, and a compost of earth, lime, and dung; but it should be observed that this is well decomposed, as fresh dung should never be applied to hop plants. The place being thus prepared the plants may be dibbled in three together about six inches apart, and forming an equilateral triangle. A watering with liquid manure will assist the roots, and the plants will soon begin to show bines. Prior to planting the "sets" must be carefully pruned and intermediate eyes notched out, as otherwise runners will show, which may cause considerable trouble. The number of plants usually set to an acre is about 3,600. The hop is a *dicocious* plant, some of the individuals being male and others female, and these have respectively flowers of a different construction and character. The male, or stamiferous flowers, which grow on stalks quite distinct from the female flowers, prepare the pollen or fertilizing dust, and afterwards wither away, committing the dust to the air, to be conveyed to the ovule of the female. A bushel of hops, grown in a garden where male plants were near, has been known to weigh over thirty-six pounds, whilst those from a garden where the males were generally eradicated weighed only twenty-two pounds. In addition to this advantage, however, the aroma of hops which have been impregnated with the pollen of the male is superior, and the strength of the

bitter much greater. It is necessary, therefore, in planting hops to see that a proper supply of male plants is secured. At New Norfolk they are now plentiful in all the gardens, and at Valleyfield they are planted at the rate of one in every hundred, every tenth plant in every tenth row being a male. As the pollen is remarkably light, and apt to be wafted away, it is also customary in some gardens to set a few male hops among the hedges to secure more perfect impregnation. In reference to the best descriptions of hop to plant the finest quality is, of course, the Golden tops of old Kent; next to that comes the White bine, or Grape hop, but perhaps the best standard variety for general growth is the Colegate hop.

Of these the New Norfolk growers have a very large quantity, and they are found a strong healthy plant giving a generous crop.

The seasons into which the work of the hop gardens may be divided in Tasmania are as follows: Preparing ground, June and July; planting, July and August; poling, September and October; training and hoeing, October, November, and December; picking, March, April, and May; scarifying and cleaning ground always. The cost of raising hops, of course, depends upon the amount of labour bestowed, and the means adopted to improve the soil. The average expense under ordinary circumstances at New Norfolk, is estimated at £30 per acre.

ARE CATTLE SHOWS AND PLOUGHING MATCHES ADVANTAGEOUS TO AGRICULTURE?

At the usual quarterly meeting of the Ayrshire Farmers' Club, Mr. Robert Dalglish, Templeland Main, Auchinleck, president of the Society, in the chair,

Mr. CALDWELL, Knockhoggie, read the following paper—Competition has long been the acknowledged medium by which the relative merits of almost everything submitted to it has been determined; and it is generally recognised as a safe, sure, easy, and practicable way of doing it. We find that competition leads and stimulates the greater part of mankind to put forth energies and to arrive at a degree of perfection in whatever they are aiming at, which otherwise would scarcely be attainable. Competition at school stirs and animates the undeveloped powers of the young mind, thereby hastening and perfecting its education. Competition in business blesses and balances society. The subject of discussion at this meeting is in the form of a question, "Whether cattle shows and ploughing, as at present conducted, are advantageous to agriculture?" My answer is in the affirmative. Extend to me, then, your patience while I support this opinion by a few remarks.

Ploughing matches are held for the purpose of encouraging and rewarding by premiums those who excel in the art of turning up the soil in the way best adapted for producing a good crop, and for most effectually keeping down grass and weeds. The ploughing which practical judges approve of is that which is straight, evenly held, well packed, the grass well put in, the seams between the furrows close and clean, the seed-bed as deep as possible at the given width of furrow, the furrows so set that when measured the face or socket of the furrow will measure about half an inch more than the back or cutter-cut, the finish neat and narrow, and the ridge so ploughed that when you stoop and take an angle view over it every furrow will meet your eye in its proper order. Many of you have heard that the pane of the furrow should describe an angle of 45 degrees; but this is a shape of furrow I have never seen, and so acute an angle is altogether impracticable. The shape of furrow that good judges approve of is, I find, about 60 degrees. If cut much more acute the pane will be too thin, the back weak, and the furrows will want that body and substance necessary to give the ploughing the required solidity. If cut much more rectangular or square we lose that depth of seed-bed and twine of furrow so much prized in first-class ploughing, and the nearer we approach the square, brick-shaped furrow the plough gradually loses command, the grass is near the top, the furrows sit on their edge, and are generally badly closed and shaky. This latter is, in my opinion, the worse of the two extremes. A new era has dawned by the introduction of the double furrow plough. The features that commend it to our notice are speed and saving of man and horse labour; and, so far as I am able to form an opinion, the double plough on even-surfaced land will in a great measure supersede the single one. Many people thought that the double plough would not be suitable for lea ploughing; but the work performed by it at the various matches has been so satisfactory as to remove such prejudices from unbiased minds; and we may now look upon it as an established, economical, and labour saving implement. There is no doubt but that there is room for improvement in this implement. We cannot expect perfec-

tion yet, any more than there was with the reaping-machine when first introduced; but I confidently hope that ere long our energetic and persevering local implement makers and plough doctors, when educated at the public seminary of competition, will bring them to the same pitch of perfection to which they have brought the single one. Allow me, then, to close this part of my subject by stating that as everything that is worth doing is worth doing well, so also is ploughing. I believe that we are indebted in a great measure to ploughing matches for the uniform good ploughing to be seen everywhere throughout the country, and also for the almost unexceptionably good working of the ploughs now-a-days. By these matches we know where to get good ploughmen and good ploughmakers when wanted. Competition has placed Ayrshire ploughmen at the top of the tree, for we find on two occasions where a number of them were pitted against an equal number from Renfrewshire, Ayrshire was the first, and on the next occasion sustained her pre-eminence; and on Tuesday week one of Ayrshire's sons, who has been well trained in the school of competitions, carried off first honours in the open Derby ploughing at Johnstone against half a hundred from other quarters. I now pass to the other division of my subject. Cattle shows are, and have been, held for the ostensible purpose of stimulating and in some measure rewarding the owners and breeders of the different animals whose properties and qualities are best adapted to the objects for which they are required in agriculture. For instance, the properties of a Clydesdale horse are soundness of wind and limb, strength of body and bone, with symmetry and action. The properties of the sheep are quantity and quality of wool and mutton. As the Ayrshire milk cows are the objects of the greatest interest and attraction, and as time will not admit of entering fully into the others, I propose to confine my remarks to this class. The properties which our judges approve of, and which, I beg to say, I endorse, are as follows: The head of the cow short, and wide at the forehead; the eyes prominent, clear, and expressive; the horns long, strong, high, and curved back; the neck long, and fine at its connection with the head, and free from loose skin or dew lap; the back straight from the roots of the horns to the tail, the shoulder thin at the top; the forequarters light, the middle short and deep, widening and deepening backwards, with well-arched ribs, filling well up behind the shoulder blade; the hind quarters long, the hock bones wide apart and somewhat prominent, with wide haunches, broad short thighs, tapering to a small, clean, wiry bone under the knee; the skin moderately thin and elastic, the bran close, soft and curly, with a silky feel; the milk veins well developed, the milk vessel long, wide, and well attached to the body, the sole or under surface a plane and running parallel to the swell of the belly; the vessel, well rounded and firmly bound up behind with four moderately-sized, cork-shaped, plumb-hanging teats, so planted that when viewed from behind one-half of the space is between the teats, and the other two quarters outside, and when viewed from the side one-third is before, one-third between, and the remaining third behind. I admit that some of these properties, such as the size or shape

of the head and horns, the shape of vessel, or size and formation of teats, have nothing to do with the milk-giving properties of the animal. These go to constitute beauty, and when we get the elements of beauty and usefulness combined, we have a specimen of the prize-taking, milk-giving, money-bringing, pure-bred Ayrshire cow, not only valuable to sell, but often more truly valuable to keep as a breeder. Some discussion has lately arisen as to the best size of cows, some alleging that judges did not attach so much importance to it as it deserved. Size has always been regarded as a point of merit, but certainly not as a leading one by judges, nor do I think it has any right to be, for we find that size has little to do either with the milk-giving or money-bringing properties of the cow, and we find that different sizes are adapted to different soils and climates—that the smaller-sized one is best suited for bare clay soils and upland districts, and the larger sized one for the fertile plain. The greater number of farmers breed young cattle for filling up their stock when the aged or those that fall out of tid are withdrawn, hence it follows that from the abundance of winter feeding and luxuriance of pasture, or, on the other hand, from scarcity in winter and indifferent pasture in summer, as the case may be, Nature in this, as in many other things, beautifully adapts the size of the cow to the requirements of soil, climate, and quality of feeding. Those in favour of the larger-sized cow say that as all come to the shambles at last there is a loss in the smaller-sized one. This objection is, I think, more imaginary than real, for we find that a given quantity of feeding sufficient to feed five of the former will do six of the latter, the aggregate weight being nearly equal, the difference being in number only. Some allege that with all our shows the cattle are deteriorating in size and quality. To this doctrine I do not subscribe. I find that, in 1837, there were 38 entries for aged cows and three-year-old cows at the Ayrshire Show, and in 1868 there were 116 entries of the same age. I venture to say that in the former year Ayrshire could not have turned out such a number of beautiful well-bred cows as was shown in 1868 and 1869; and I likewise hazard the opinion that those specimens which carried away the premiums have never previously been surpassed, for be it remembered that in 1868 and 1869 Ayrshire competitors won and retained first and second placed in the open show against all comers. Allow me, in conclusion, to say that we will do well to cultivate, to keep pure, and if possible, to improve this valuable breed of cattle named after our county; and we are quite safe to accept and endorse those points of excellence to which judges give precedence, for we find that judges are not fanciful theorists, but selected from amongst the most interested, practical, and experienced of the agricultural community.

Mr. CRAIG (Polquhays) was glad to hear the double-furrow plough was taking so well amongst his low country friends. He hoped they would soon be able to bring it to the mountainous districts also. As to the exhibitions of stock, he was perfectly convinced that Mr. Caldwell had taken the right view. His description of the Ayrshire cow might not please every one, but it was the one generally adopted by the judges, and contributed greatly to the beauty of Ayrshire animals. There were a few points that might be criticised from the weight-making point of view. For instance, he did not think that short heads contributed so much as some breeders imagined to the making of a useful animal. He thought the head should be a little longer than the present fashion. With a small head they were sure to have a small animal. Otherwise he thought the description of the cow was particularly good. One of the chief benefits of shows in his opinion had been to teach the public what to breed from, and the form of animal that would be best for them to rear. Where the judges were properly selected, all who came to the show-yard had an opportunity of seeing the animal that was considered the best by men of knowledge and skill.

Mr. TENNANT (Creoch) thought cattle shows were very useful in raising the standard of their ideas in reference to cattle, and in making them more careful in their selection of breeding animals. He believed also that a pure-bred Ayrshire animal that would gain a prize would be a more kindly feeder and be more valuable for all purposes—either for milking, fattening, or producing cross-bred animals for fattening.

Mr. REID (Monkton Mill) said it did not occur to him that Mr. Caldwell, in speaking of the cow's head meant a small

head, but rather a good broad growthy head, and with that he entirely agreed.

Mr. SMITH, jun. (Mosablown) said he highly approved of the description of ploughing. He had heard it remarked that a furrow cut in a rectangular form was easier drawn by the plough; but he had always thought that a good working plough cutting a good furrow which came right over was both easier drawn by the horses and easier on the man. He had heard it said that as much of the furrow should be below the seed as above it; but he thought with a rectangular plough there was too much of the furrow above the seed, because it left the seed loose, and it got down till nearly all the furrow was above it.

Mr. ROBERTSON (Ryeburn) entirely coincided with Mr. Caldwell's views. His description of a well-ploughed ridge had been most minutely given. But he remembered when he was learning to plough, that he could get more people to tell him what a well-ploughed rig ought to be than he could get to tell him how to do it. That was always the objection he had to ploughing matches and also to cattle shows and cheese shows, that there was not enough of benefit given to the public by those who were successful competitors. He remembered that the man who could take a first, second, or third prize in ploughing was sometimes in the habit of going six or eight miles to a smithy, and nobody saw his plough, or the particular angle of his sock or the point of his coulter. He kept all that to himself. Consequently, like many other ploughmen, he (Mr. R.) laboured for a while in the dark. He thought if it was made a condition in all these ploughing matches and cattle and cheese shows that successful competitors were under a moral obligation, if not a legal one, to give their fellow members of the same society practical instructions as their mode of proceeding with their implements or cattle, then they would become useful, practical things in the country. But at present he did not know that there was much good to be derived from them. He found many good ploughmen, for instance, who could not set their own irons; and one great use of ploughing matches should be to teach them to do this. It was the same with the rearing of cattle and the manufacture of cheese. You might pay a premium of £5 or £10 to learn your dairy keeper or yourself to make first class cheese, and a thousand to one but the person with whom you learned had one little thing connected with his system which the learner was too dull to pick up, or which was intentionally kept from his view. He believed it would tend to the continuance of the success of the Ayrshire Agricultural Association if it would make it one of its standing rules that all first class prize-takers should give instructions in the process they followed at a nominal charge to their fellow members.

Mr. BROWN (Arndell) said he subscribed to every word that Mr. Caldwell had said in regard to ploughing; and were it not that he had been represented as being wrong in his ideas of ploughing, and as disapproving of those that were becoming more fashionable, he would not have added anything on the subject. Mr. Caldwell's essay had come at a very appropriate time for the makers and users of ploughs. It was evident that with the double-furrow ploughs there was something wrong at first. That was not to be wondered at; but what he did wonder at was, that men should have approved of them as they were, and of the shape of furrow that they then cut. He had no objection that a plough be made to cut four furrows at a time. He had seen it done, and the reason that it was not a great success was, that it did not shape the furrow in the way described by Mr. Caldwell. He was satisfied that if Mr. Fowler's steam plough had cut a proper triangular furrow it would have been a great success in this country for a long time. His opinion of the double-furrow plough was that whenever it was made to shape the furrow in the same way as the ordinary plough it would be a great success too. He could not speak about their being much easier drawn; he knew they were a good weight in themselves; but he was satisfied the nearer they got the furrow to that of the ordinary plough it would be the easier drawn. A plough in good trim was always easier drawn and easier held. He had no doubt the double-plough would be like the reaping machine, and that it would be brought to such perfection that it would be carried, as Mr. Craig had said, to the tops of the mountains. With regard to cattle, he thought Mr. Caldwell's description of the Ayrshire cow was almost perfect, still many of the points were not essential to good milking qualities, but were more

matters of fashion, and fashion depended on the taste of the times, and was liable to change. With regard to the breeding of cows, it had been said that it required a man to go to cattle shows to learn where to breed from. But how did they account for the fact that men who were at one time successful sowers and prize takers, and who were constantly attending cattle shows, were now nowhere in the prize list?

Mr. WHITE (East Rawa) said: They were greatly indebted to Mr. Caldwell for his able and excellent essay. His own opinion of ploughing matches was that in times past they had served a good purpose. They might sometimes have caused a little expense to farmers; but he thought that expense had not been ill-incurred. It had been the means of giving the ploughmen an interest in doing their work well, and if good ploughing was better for the crop than bad ploughing, the farmer was not without his reward. As to ploughmen not being able to put their ploughs in order themselves, he did not know that they would have been any better in that respect had there been no ploughing matches; he rather thought they would have done it more carelessly. Competitions had been useful in making plough-makers pay more attention to the implements they produced, and he thought in this way they had conducted to the benefit of agriculture generally. And now that ploughs and ploughing were undergoing a great revolution, perhaps they might have competitors after this of a different description. In order to perfect the implements and enable the men better to accomplish the work, he thought it was likely that competition would be the means that would be resorted to still. With regard to competitions in cattle, he considered they had been only beneficial where people had taken advantage of them. If they could manage to raise a stock such as had been described by Mr. Caldwell, he had no doubt they would prove more remunerative than the cattle generally produced, either in the production of dairy produce, or in the rearing of store cattle. Cattle shows had been one means of exhibiting to the public animals as near that description as they had been able to rear. No doubt many things could be said against cattle shows, and many points might be brought up in which they had not benefited the community and had not improved the breed of cattle. But would these points have been improved had cattle shows not existed? He did not think the breed would have been a bit better, and perhaps not so good. He therefore concurred with Mr. Caldwell in thinking that both cattle shows and ploughing matches had been in the time past beneficial to agriculture generally.

Mr. STEEL (Burnhead) said he believed that but for the influence of ploughing matches, instead of having three horses drawing a double-furrow plough, they might have been going on, as their fathers did 70 or 80 years ago, with the old wooden plough drawn by four horses. He did not think, for his part, that ploughmen generally were not able to set their own irons—they were both able to do that, and to tell the smith how they wanted a thing done; nor did he think there was any unwillingness on their part to give information. With regard to the breed of cattle, even apart from remunerativeness, he thought it was well to have a beautiful animal that was pleasant to look at; but he knew plenty of Ayrshire and Leicestershire farmers who, instead of getting 7s. 6d. for a sleek calf, were not able half to supply the demand made upon them, and readily got from £3 to £5 each for them. Surely that must be a great improvement in itself.

Mr. MURDOCH (Holehouse), while he approved of the principle of competition generally, thought their ploughing matches and shows had not been so well directed as they might have been. Fine ploughing and beautiful cattle were very good in their way; but he did not think they were the means of adding a shilling to their revenue. There was a great loss of time in preparing for ploughing matches and other things, and generally, those who looked on got more benefit than those who were engaged in them. They might have had some effect in giving them better implements; but great mechanical improvements had taken place in other branches of trade in which there were no such competitions. As to the great prizes sometimes given for prize cattle, it was more on account of their rarity than of any real value they possessed. Unless they gave more milk, and were worth more in the shambles, they could not see that they were more valuable; and he believed a comparison would show that they had not a superiority in these respects, but the reverse. There was great expense in preparing animals for cattle shows, and they

suffered afterwards when put out to the grass in such high condition, the grass not being equal to the feeding they had been getting in the house. If there had been benefits from ploughing matches and cattle shows, there had also been a good deal of evil.

Mr. LEES (West Carnigillan), referring to a remark of Mr. Brown that some old prize-takers were not now heard of, said it was impossible that people could always stand at the top of the list: it would be a pity if they could. When people were fortunate for a time they were apt to get careless, and others came up and passed them. With regard to the value of pure-bred stock, how many men had come from America and other places to purchase Ayrshire cattle, and their first concern was to find out who were prize-takers, and they gave them handsome prices for their stock. If they were not in the competing list they had no chance of getting their animals sold to such advantage. He had felt the benefit of this himself, and he believed the calves alone would pay the extra expense they were at. As to dairy cows, he thought the great loss of their Ayrshire cows was in having too little condition when put out to grass.

Mr. WALLACE (Braehead) said he was greatly pleased with Mr. Caldwell's paper, which appeared to him to avoid both extremes. With reference to Mr. Brown's remark about being astonished at some people being satisfied with the double-furrow plough as it was three months ago, he was one of those who had tried it, and was satisfied; and because he was satisfied with it then, he was not satisfied with it now that it had been made for ploughing lea. He had used it for ploughing wheat land, and it made better work than ever he got done with the common plough; but just because it made so good a job for wheat it did not suit lea-land. He thought that to adapt the plough for all kinds of work it would be necessary to have two sets of irons and two sets of reasts, but he did not think this would be any great loss. One advantage of the double-furrow plough was that they were less dependent for good work on the care of the ploughman. Of course, it required more attention, but a man might get on well enough with one of these ploughs who had never held a plough before. He thought ploughing matches were useful in stirring up their young men to emulation, though he did not know that they were profitable to the farmer. With regard to prize cattle, he did not think that class of animal was profitable to farmers generally. For his own part it had been always necessary for him to study to have good milk cows, but he did not go to a show-yard to find them. The real reason, he believed, why some old prize-takers gave up competing was, that they could not afford it any longer. One old prize-taker had stated that as a reason to him for giving up. He was inclined to agree with Mr. Craig about the head of the cow. He thought it was necessary that a good cow should have some size. He had sometimes bought some of these delicate prize cows, and he found that they were not of much use to him with his system of feeding till they got rid of some of their fineness. The object of a milk cow was to give milk, and the thing they should study was to rear a class of cows that would give them plenty of produce. He had often found these nice little, closed-packed cows better feeders than milkers. He remembered sending four cows, not from his own stock, to a gentleman—one of them a nice little show cow, cost £90, and the others about £16. He remarked to him that in all probability the milking qualities would be in inverse ratio to the price; and it turned out as he expected, that the £16 cow gave far more milk than the £90 one.

Mr. YOUNG (Kilhenzie) said he was a strong believer in competitive examinations in all things. His opinion was that without ploughing matches the merits of the double-furrow plough would not have been so speedily or so generally recognised. He thought cattle shows had been an advantage to the farmer in showing the breed of cattle likely to bring high prices; and he had always been given to understand that a well-bred cow was easier kept and would bring several pounds more when they came to sell her.

Mr. B. M. CUNNINGHAM (Shields) thought Mr. Caldwell's paper very good so far as it went; but it did not embrace the whole question, which was whether ploughing matches and cattle shows, as at present conducted, were conducive to the interests of agriculture. Now, that point had not been discussed, and what he would say would bear on that point specially. He admitted that competitions of all kinds

were beneficial, but the thing was to get competitions carried out in a fair and natural way, and he believed neither ploughing matches nor cattle shows were so carried out at present. He had ascertained from the Secretary of the Highland Society that the conditions on which that Society gave medals for ploughing matches were that the land should be ploughed at the rate of ten hours to the imperial acre, and that no assistance should be given to the ploughmen. Now, of all the reports of ploughing matches he had seen in the newspapers this year, he only saw one in which the time was given, and that was at the rate of 16 hours per imperial acre. Whether such a rate of ploughing as that was conducive to the interests of agriculture, he would leave them to judge. His opinion was that if a man could not plough an imperial acre of land in ten hours he was not fit for his business. Complaints were frequently made that servants did not do the amount of work they used to do, while wages were a third higher, and yet the very farmers who spoke thus were the men who encouraged their ploughmen at these matches to plough at a rate which required 16 hours to do what might be done in 10 or 8 hours. He did not think any one had attempted to show that prize-ploughed land grew any more bolls per acre than land ploughed at less expense and with less time and trouble. They should remember that lea ploughing, on which all these pains were taken, only stood for a few months. With the price at which grain now stood, they would find that they would need to study how they could lessen their outlay if they were to meet their engagements. He was glad to hear the remarks of Mr. Robertson, which were only too truthful, about people who kept their knowledge to themselves. He had himself known of individuals who had made experiments and failed, but carefully concealed the results from their neighbours. Now, this was entirely wrong. This Club, he was glad to say, was got up for the very purpose of exchanging experience, and giving it forth to their neighbours and the community through means of the press. One other thing he had observed with pain in connection with ploughing matches, and that was the kind of prizes sometimes offered. He noticed that some of the ploughmen got a bottle of whisky, or a bottle of brandy, or a pound of tobacco. Now, where he a ploughman, and were anyone to offer him a bottle of whisky or brandy, he would dash it at his feet as a deliberate insult. With regard to cattle shows, his remarks would also bear on them as they were at present conducted. One objection he had to them was that there were far too many of them. There was now one in nearly every parish. Farmers were far too much taken away from their work with these sort of things. If merchants, manufacturers, or professional men were to spend one-tenth of the time that farmers did at ploughing matches, cattle shows, fairs, and dispensing sales, they would never get on in the world with their business. He only spoke of the time that was wasted; but there was a tendency in these things to other evils. If they could get cattle shown in their natural state, there might be considerable advantages derived from cattle shows. But a person who wished to be successful must take all means possible to get his animal into the state that would gain a prize, and there was a temptation to use unscrupulous means to attain his end. Exposures of doctoring and imposition had been made in connection with the Ayrshire Association. As regarded showing cows in milk, he could never see where the real advantage was. He supposed the object was to get the best milker. Well, if cows could be shown in their natural state with ten or twelve hours' milk in their vessel, they might be able to get at whether they were likely to be good milkers or not. But it had happened hitherto that cows had been shown with too much milk on them—they were what was locally termed "hafted;" and it was generally the case that if a cow was "hafted" once, it was destroyed for life. Now, until something was done to do away with that artificialism and deception, he could not see any good to be got from their cattle shows. Mr. Caldwell had stated that the cows were better now than they were twenty years ago; but his opinion was that, whether as regarded substance, symmetry, or size, they were not to be compared with what they were twenty years ago. With regard to fat stock, letters had appeared in the agricultural papers recently, showing that the state of obesity to which animals were brought not only rendered them more liable to disease, but injured their generative functions. This must be the case with some of the cattle shown at their agri-

cultural shows. His reply to the question under discussion must be in the negative.

Mr. DALGLISH, the Chairman, said they had had a very interesting discussion, and he had no doubt that the remarks that had been made would do good. It was evident that the opinion of the majority of the meeting was in favour of ploughing matches and cattle shows, even as at present conducted; but at the same time the abuses of the system had been very strongly brought out. Their object should be to get rid of these abuses. In connection with cattle shows the great error that many people committed arose from the ambition to obtain a prize at any cost, and they often did not hesitate to keep a cow dry the whole year, and utterly spoil her milking qualities that she might take a prize. This was an extreme abuse of the system, but there were lesser abuses, such as over-feeding, which was a great error, particularly in districts like the one where he was situated, where the grass and climate could not maintain high condition unless they added artificial feeding. If they did go on giving artificial feeding summer and winter, they found the cow, if not subject to disease, at all events subject very soon to natural decay. If they could get their cattle shows to bring out only those points which were really profitable, they might have well-shaped, and at the same time really useful animals. With regard to ploughing matches, it was evident that they had derived great advantage from them, and if they were a little differently conducted, and less time lost with them, they would be still more useful. Certain individuals if allowed plenty of time could do very fine work; but place them alongside of others, where they were restricted to time, and they would be easily beaten. He was not much given to boasting, but when he was a young man he was told if he went to a ploughing match he would likely take a prize. He never tried, however (laughter); but he could plough as quick and as well as any man he ever saw. He believed there was not a furrow amongst them that would have taken a prize, but at the same time after it was harrowed you could not have known but it was prize ploughing (laughter). He thought if there was more attention paid to the ploughing of red land it would be a great improvement on the present system. Any person might plough a lea furrow if he got his dimensions and had his plough set right; but to plough a red field with the ridges thoroughly straight and a nice roll upon them, and done in such a way that a string laid across would touch every furrow, required a higher amount of skill and dexterity. The chairman, after some further remarks, concluded by saying they were all much indebted to Mr. Caldwell for his excellent production.

Mr. CALDWELL said he would briefly notice one or two statements that had been made. Mr. Murdoch objected to cattle shows because they did not cause the animal to be of any greater value to the farmer. Even admitting, for the sake of argument, that they did not give more milk, and that they were not heavier when killed, it was surely profitable to the agriculturist if when he came to sell his cattle he got a larger price for them. He thought Mr. Cunningham was rather in error in regard to the time at ploughing matches. He had been a good deal at ploughing matches, and in every case the men had to plough to time, which was generally 16 hours to the Scotch acre. He believed that was as quick a rate as stiff lea land could be ploughed at, and was as good as 10 hours to the imperial acre on Mr. Cunningham's level land. He had found that the best ploughman was generally the quickest, and that the best lea ploughman was generally the best driller and best red-land ploughman. He would only again remind them that their judges were practical men, and not likely to have a weakness for what was merely fanciful, but generally preferred what was valuable.

On the motion of Mr. YOUNG (Kilhenzie) a vote of thanks was tendered to Mr. Caldwell for his able and instructive paper.

A similar compliment was paid to the Chairman, and the meeting adjourned.

SUFFOLK AGRICULTURAL SOCIETY.—About £200 has been collected in Sudbury for town prizes in connection with the approaching meeting of the Suffolk Agricultural Association at that town.

ON THE MANAGEMENT OF SHEEP.

BY THE NORTHERN FARMER.

Of all the articles raised on the farm, few are so fluctuating in value as the produce of the flock, the variations recurring not only at intervals of a few years, but almost invariably at certain seasons in each and every year, the difference in the downward direction being sometimes so great as to cause considerable despondency in the minds of those who own this description of stock, and who, in consequence of faulty arrangements as to the supply of food, are forced to sell just at the period of depression. This is almost sure to happen with those who make a rush and get into sheep with intense enthusiasm when they are commanding large prices, assisting by so doing to raise them still higher; and by-and-by, probably in not more than two years afterwards, the produce of the flocks so hurriedly got-up is sent to market, too often merely as store lambs, or badly-finished mutton—and prices get forced down much below the paying point. This consummation cannot, of course, be brought about by a few isolated individuals pursuing the same system: but singularly enough, the periodical anxiety to get into sheep seems to be a general thing all over the country, and they being of a most prolific nature, the pastures quickly become over-stocked; and hence the desire to get rid of them is just as strong as was the anxiety to purchase. Although the breeding and feeding of sheep by amateurs does not always show the balance on the correct side of the ledger, it is, in the hands of those who stick to it and make it a regular branch of business, a very profitable investment notwithstanding. In every pursuit practice makes perfection, the management of sheep being no exception; and those who keep up a constant and regular stock are careful to provide abundance of food for all seasons, and thus being in a measure independent, they can hold until such time as the state of the markets gives them an opportunity of obtaining a remunerative price. The flockmaster who breeds his own stock, seldom permitting an admixture of strange blood, except through the rams, has many advantages over those who are constantly changing. He secures for his flock fixity of type, always a recommendation to purchasers, being at once significant of good breeding, aptitude to fatten, and freedom from disease. It shows also, and that convincingly, that care and judgment has been exercised in the selection of the parent stock; and when a certain type has been persevered with until it becomes hereditary, much credit and profit accrues therefrom. A pure-bred white-faced sheep, so carefully-bred as to present a very exact resemblance to a butter-firkin, straight along the back, broad across the quarters when viewed from behind, as well as over the loins, full and prominent between the fore-legs, and altogether evenly-balanced in both fore and hind quarters, with a good firm fleece capable of resisting a pretty severe blast and preserving the skin warm and dry, however soaked may be the surface, is the form which all should desire to attain, sparing no amount of trouble or moderate expense until perfection has been reached. With the Downs there is less difficulty in securing perfection of form, their natural shape coming much nearer to it than that of the white-faced breeds. We have long been of opinion that the most satisfactory results in a monetary point of view are to be obtained by a judicious system of crossing. The Down gives rotundity of form to the white, while the

white imparts increased size and weight, and at the same time largely benefits the fleece. Even a quarter of white blood shows immensely on the clip, the wool having all the qualities and much of the appearance of the Leicester or Lincoln, from whichever it is derived, while the general outline of the animal, and the colour of the head and legs, is but little changed from that of the pure Down. It is very undesirable to breed from cross-bred rams, leading, as it inevitably does, to deterioration in the character and usefulness of the flock; but it is by no means bad policy to breed from cross-bred ewes. When the latter possess a dash of Down blood, let it be little or much, they make exceedingly useful and highly profitable sheep; are harder than the pure white, and less injured from continuously wet weather. They make excellent nurses, the Down blood developing the milking property; their progeny having every characteristic necessary for future utility and profit. A little Lincoln blood is a very valuable accessory in a cross-bred flock, giving the wool staple, substance, and weight. It also adds to the size and stamina of the animals. Once introduced, its good effects show for a very long time, the substantial look of the fleeces more particularly always attracting especial notice.

Many of the established breeds have reached their present state of perfection through having been crossed with others which possessed in a remarkable degree the qualities in which they were more or less deficient. Thus, some of the Leicester stocks, noted for the weight of fleeces which they carry, owe that valuable quality to a slight infusion of Lincoln blood; while the now famous Border Leicester owes much of its hardness, compactness of figure, and improved milking property to the Cheviot. The resemblance is noticeable more particularly in the formation of the forehead, which is flat, smooth, and neat-looking; and in the grey colour of the face and legs, which speaks very plainly of the hardy mountaineer. The face and forehead of the English Leicester is quite distinct, being round and prominent, and the colour much lighter. Downs in the same way have been and are still crossed with each other for the purpose of effecting certain alterations in the character of the flock which may be deemed desirable or necessary. No difficulty need be experienced in laying the foundation of a good and useful flock of sheep, parties who propose getting into that kind of stock for the first time having a wide and largely-developed field to choose from. All that is necessary is to fix on the particular breed which has been proved to be most suitable for the locality, or even the particular variety of soil on which they are to be fed, whether Lincolns, Cotswolds, Leicesters, or any of the varieties of Downs; then, purchasing from a careful breeder, taking care, if possible, that the land they come from is inferior in quality, as then the improvement will be marked, beginning from almost the first day they are placed on their new pastures. Some people seem to be of opinion that sheep are a very convenient stock, requiring little care and attention; and that they are able to forage for themselves, and pick up a living where cattle would be in a state of semi-starvation. This is a most mistaken idea, which many have found out to their cost. If not properly attended to, disease of a very destructive kind is sure to break out, involving their owner in a wilderness of trouble;

and if a regular supply of food is not kept up for every season, all the profit the flock may make will be absorbed in expenses. It is only reasonable to suppose that if the animals are permitted to lose condition for want of a proper supply of food at one season, a considerable period must elapse, after it becomes abundant, before they recover what they lost; the loss in the meantime being heavy, in the case of ewes, for instance, as the fleece will be valuable only according to the feeding, and the lamb, from being imperfectly nourished, will only be in store condition, instead of thick fat.

No one can tell better than the wool-merchant whether the sheep have been regularly fed during the winter months or the contrary, the weight of each fleece not alone telling the tale of imperfect nourishment, but loss of substance in the fibre gives proof incontestable of parsimony or neglect. So sure is this test that even a single week's starvation will show at clipping-time, the growth of that week being thin and hairlike, the proper substance being recovered when liberal treatment was resumed. While affording a very large amount of satisfaction to the grower to hear his wool praised by the merchant as first-class, well-nourished, and well-handled, it must be in the same degree humiliating should he, on the other hand, be told that surely he must have treated his flock very badly to have the wool so wretchedly poor in fibre and so light in weight. The selling mart is thus with this class of produce, as with every other, an unfailing criterion of successful management.

Semi-starvation during the winter months will not pay; if sheep are a leading stock on a farm crops must be grown especially for their use, as well as for cattle, and their wants supplied with nearly the same regularity. Breeding ewes, which are sometimes allowed to pick up a living as they best can on very indifferent pasture, should receive a daily feed just sufficient to keep them in good health and preserve their condition. Assuming that they have had a sufficient interval, from the time the lambs were weaned until put to the ram, to recruit their strength and recover condition, much care should be exercised to preserve them strong all through the winter, so that instead of dropping weak and puny lambs, which must be the case with many of them if the dams have been badly fed, they may come to the world strong and hardy, and so get a fair start. A few turnips strewn on the pastures is all that will be required for the three months previous to lambing, the quantity being regulated according to the roughness or otherwise of the grass to which they have access. The very low price of oats at present ought to be a great inducement to owners of sheep to feed with liberality, a better food than oats being scarcely obtainable, preserving them as it does in magnificent health, and almost paying for itself, if kept up continuously, by the increased weight of wool alone. A flock of ewes, of say 100 head, will, if given three-quarters of a pound of oats each day from 1st January to 1st May, have consumed four tons of oats, costing, at present prices, about £25—a sum small in comparison to the immense benefit which the ewe and her offspring will derive from its use.

It is absolutely impossible to overestimate the value of such an amount of nutritious food both to the present and future well-doing of the flock, all other things being equal. There will, in the first place, be fewer casualties—a most important item, going a long way itself in paying the corn-bill—the fleeces will be firmer, and the lambs fat from the day of birth until that on which they leave their mother. A fat lamb four months old, nicked along the back like an aged wether, will, on the average of seasons, be worth 85s.; the same animal, if in merely store condition, scarcely bringing 20s. two months later. For

keeping up the flow of milk, turnips, corn, chaffed hay, and cake can only be regarded as auxiliaries, as there is no food so productive of milk in the ewe as grass. For the early bite nothing can come up to the young seeds; therefore every farmer should strive to have as good a breadth as possible held over, without a hoof being on it from at least the 1st of November. If he has two fields so much the better, as when the ewes with their lambs have eaten one moderately bare, they can be removed to the other, the first recovering itself and affording a fair amount of herbage by the time the second has been eaten down. The extreme usefulness of the extra food in the shape of roots or corn now shows itself by assisting the grass, making it last just double the time that it could possibly do if not supplemented with extraneous food. Lambs that have never been permitted to recede in condition or growth attain to a most remarkable size, when of the right sort, by the time they are put on the turnip break, the backs being immensely broad, the condition grand, and the fleece wondrously heavy. When abundance of keep has been provided, and the farm is well sheltered either naturally or artificially, it is of some consequence to have the lambs dropped as early as February, particularly if the whole or a portion of the flock are intended to be cleared off as fat lambs. Their owner can thus secure the highest prices of the season from being enabled to sell at a scarce time, many of the cull ewes being got rid of also at remunerative prices soon after being relieved of their lambs. Should, however, the intention be to hold over so as to finish on turnips, the month of March is quite time enough, much trouble and anxiety being saved by this arrangement. Whatever time the lambs are dropped, whether early or late, abundance of food must be provided for the ewes; so that there may not be the slightest chance of running short for even the most limited period. The cold piercing winds of early spring are sufficiently trying to the flock when well fed; but when cold and hunger are combined, the milk soon dries up, and once it does so, no amount of kindness afterwards will again bring it on. With a short supply of milk, the lambs get stunted, lose condition (and that, too, in an inconceivably short time), and cannot possibly be brought to the degree of excellence which they otherwise would have attained if not permitted to get checked in the earlier stages of their growth. We thus find that the attempt to keep a large stock over the winter without ample provision in the shape of roots, cabbages, hay, oats, or oilcake being provided for their maintenance, must inevitably result in failure, no amount of care or skilful management being able to carry them through in profitable condition. If it is desirable to keep a stock of ewes on a farm or piece of pasture-land, where there is no cultivation, it can only be successfully accomplished by running them thin on the ground, so that the grass may not get dirtied too much with their droppings, and they can have a rough bite every day in the year. If the land is of good quality, and has been laid down to grass in good heart and with good seeds, a light stock will leave a profit, when a larger number would involve a very serious loss.

On weaning the lambs, they should be removed to a field of clean grass which has been *amised* especially for this purpose; not too rich, or else it would bring on scour, and probably prove fatal to a number of them; nor yet too dry and hard, as then they could not extract nourishment sufficient to keep themselves progressing. Above all, freedom from sheep-droppings is the leading point to ensure a healthy constitution in the young creatures just at that period of their existence when they have to depend on solid food alone for a livelihood, and when there must necessarily be a very great change in the action of the digestive organs, and in the character of

the secretions. Lambs, when placed in fields which are, or have previously been, occupied by cattle, do wonderfully well, there being scarcely a casualty, unless from accident; and even although the land may be very bare of grass, they thrive surprisingly, a fact which clearly shows the necessity of providing this class of stock with a run which is clean and untainted. Towards the end of autumn, when grass begins to lose its succulence, getting watery, and devoid of nourishment, extra food should be given to them, which they will very soon learn to eat. This should consist of a little cake or corn (if the latter is crushed, so much the better), a small quantity of chaffed hay, and a few of the softer varieties of turnips, such as the Pomeranian, greystone, and green globe. It is of no use giving rapecake to lambs, or, indeed, to sheep of any age, all having a strong dislike to it. Linseed-cake they delight in; and even such a small quantity in the day as a quarter of a pound has a marked effect on their healthy development. Whether intended to be finished off for the butcher on turnips, or kept over as stores, it is well to teach them to eat thus early, and accustom them to the use of these foods, as in the event of severe weather compelling them to be altogether hand-fed for a time, many young sheep will actually die of starvation rather than touch a turnip, or at best become so attenuated before taking to the food as to become nearly valueless. It is much better policy to feed store sheep liberally in early winter, and have them strong for the spring, than to hold over the food altogether for that season.

If permitted to get very much reduced in condition, the turnips do but little good, merely running through them; whereas, when the sheep are strong, they can stand a great deal of severe weather on a moderate supply of food. Hay alone, given in racks on a sheltering part of the field, or even straw, which we have seen them eat greedily when confined in yards during a snowstorm, will bring them through a lengthened probation apparently but little the worse. It is, however, a very serious matter when such a trial overtakes them if in low condition, many having to succumb from actual inanition. That portion of the young stock intended to be finished for the butcher previous to the 1st of May must have their wants well provided for, not a meal being missed; and should they have been liberally attended to up to the period of going on the turnips, they will now both grow and fatten, attaining a great size after four months of feeding, and worth, on the average, taking one season with another, from 50s. to 70s., wool included.

Full-feeding from the period of birth has the great merit of inducing early maturity, all the animals not required for stock purposes being cleared off within the year, or, if a month or two later, not permitted to trespass on the pastures, and lessen the food of those which are coming on.

No better system was ever devised for cleaning, manuring, and consolidating the soil, and putting into the right condition for growing profitable crops of corn and grass. No one need long complain of having his land poor who is possessed of means to carry out an extensive system of turnip-growing, to be fed off the land with sheep, the objection being often brought against it that it makes the land too rich, and the after-crops are injured from the straw being too soft to stand till harvest. This fault is on the right side, and can easily be obviated, where there is such a tendency, by removing a portion of the turnips, if a heavy crop, and using a larger proportion of corn than of cake.

Very old pastures are not suited for sheep, nor land much covered by trees, the grasses of the one wanting succulence, and on the other their sourness tending greatly to retard the progress of the animals. A farm,

the greater portion of which is worked on a system of convertible husbandry, but on which is retained a piece of permanent pasture, hard and healthy, suits admirably for sheep. The green crops, so essential for finishing off, are thus at hand; and the young grasses and clovers, of which there is every season a considerable breadth, come in just at the right time, when wanted for the ewes and lambs, affording an abundant supply of milk-producing food six weeks at least before a full bite, or anything approaching to it, could be had on an old pasture-field. The beneficial influence of young grasses on sheep is fully exemplified in the great improvement effected by placing them on the stubbles to pick up what little grass they can get on the removal of the corn. Not only is condition improved, but the health of such members of the flock as have been injured by scour is thoroughly re-established.

In making arrangements for a supply of food throughout the year, it should never be omitted to have a field or two laid down without a crop, with a good selection of grasses, clovers, and a few pounds of rapeseed to the statute acre. This may extend to ten, twenty, thirty, or more acres, according to the extent of the farm and size of the flock. As a source of food of the very best kind, both as regards quantity and quality, such a piece of grass stands second in importance only to a large breadth of turnips, and when it once has been introduced, and given a fair trial, it will seldom ever be omitted. As we have already seen, the turnip is both useful and profitable in enabling the farmer to get rid of each season's young stock within the year, without trespassing on the grass reserved for those which are coming on. A piece of grass laid down in the manner we have described serves a similar and equally useful purpose by giving an opportunity of finishing off all old and cast stock, making them up in first-rate condition for the butcher, without trespassing on the turnips, permitting them to be held over for the sole use of the store and feeding stock.

The field chosen for this purpose should be in as good heart as possible, as the richer it is the better will the grasses succeed, and the better will it answer the purpose for which it is intended. Sown as early in April as the character of the season will permit the necessary preliminary operations to be performed, grasses will be sufficiently forward by the end of August to permit of being pastured, and, assuming that the summer has been a favourable one for their growth, it is really astonishing what a vast amount of valuable sheep food will be available on each acre. If the rape is rank and strong, the animals may neglect it, roaming over the field, and picking out the choicest morsels; this, however, can easily be obviated by netting them in the same way as is done on the turnip field, when they will eat the enclosed square as evenly as if it had been mown with a scythe. From four to eight sheep to the statute acre, according to size and condition when laid on, will be fully finished, and the field still left rough of grass to be held over for the ewes and lambs in spring. By no other mode of feeding or kind of food can old cast ewes be got rid of so easily as by finishing them on such grass as this; no condimental or artificial food of any kind is required, old ewes of a good breed being cleared out after a couple of months' feeding on the produce of the field alone at 80 lbs. a quarter, and choke-full of inside fat.

Our experience and opinions on sheep-farming having now been pretty fully detailed, we close by giving it as our firm conviction that full profits can only be realised on those farms which are worked on a mixed course of husbandry, the supply of food for every season being so great as to feed twice the number that could otherwise be kept, and the stock being cleared off at an early age gives both a quick return and a large profit. Much depends on the breed. Crosses we have found to do best,

that between the Leicester ram and Shropshire Down ewe being scarcely excelled by any. The latter breed of sheep we consider one of the most valuable at present cultivated, and which it is impossible to overestimate; its money-making capabilities placing it in the very highest order of merit. Too much care cannot be exercised in

the management of a valuable and highly-bred flock with regard to their health as well as their feeding, disease once introduced too frequently committing sad havoc before it can be expelled, the intense annoyance consequent on its presence being nearly as great a punishment to the flockmaster as is the pecuniary loss.

WHEAT AND BARLEY GROWING ON THE COTSWOLDS.

At the last meeting of the Kingscote Association, Mr. BURNETT said: We had lately a long account of what may be called new systems of wheat cultivation, and we often hear and read of people at a distance growing double the quantity of wheat and barley they did a few years ago, either by using steam cultivation, or by some other new system. I would not say a word against those gentlemen who have given much of their time and exerted themselves to the utmost of their ability for the advancement of agriculture, which is of the utmost importance to all—and owing to our being situated on one of the highest ranges of the Cotswold Hills, where the soil is light and near the rock, we can only feel an interest in hearing that man is succeeding in cultivating the land he occupies; but we are not to be discouraged in the position we are placed in. No one will doubt that a much larger quantity of wheat and barley is produced now per acre than was thirty years ago. I am of the opinion that this is not done by any new system, but by an improvement of the old—such as in the time of planting, using drills, instead of sowing, cultivating, harrowing, and rolling with improved implements, and last, but not least, having the land in what is termed a higher state of cultivation through the application of richer manures. All this will be readily admitted, as it is that which every real practical man knows; but the object of our meeting is to gain information, that we may be worthy of the position we hold towards the nation at large, and also towards those with whom we are more intimately connected. The first question is, can the present system of wheat cultivation in this neighbourhood be changed so as to yield a better remuneration without injury to the following crops and the farmer? Steam cultivation is one of the great improvements of the day on heavy lands, but where we can plough an acre per day with a pair of horses, taking all into consideration, it will not pay. Deep cultivation has been tried in this neighbourhood, and failed. The system of using the farmyard manure for the wheat is good on heavy land, where the farmer is not so dependent on the root crop as he is on the hills; and on what might be termed light land. I have heard it spoken highly of, but having had no experience will not hazard an opinion as to the result in this neighbourhood. Next, as regards top-dressing with artificial manures in the spring. Many advocate this practice, although I doubt whether there are as many in this neighbourhood as there were ten years ago; where the old system is practised, the cupboard of the wheat plant is supplied in the growth of roots (the greater part fed on the ground, and the rest given by the two years' ley). This is admitted to be a good system, but many tell us to just add a top-dressing in the spring, and the results will be wonderful. In 1860-61, and '62 I tried this system, and with similar results. The results of 1862 I will show you.

1862.—KINGSCOTE FARM EXPERIMENTS.

TOP-DRESSING WHEAT.

Name of Manure applied.	Produce of one year.	Wheat.		At 6s. per Bushel.		Loss of Manure		Balance.
		Bush.	Lbs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Proctor's Wheat a Manure	36½	60		11 11 1	2 0 0		9 11 0	
b Guano	36½	60		10 19 0	2 0 0		8 19 0	
c Nitrate of Soda	37½	58½		11 5 0	2 0 0		9 16 0	
d Soot	36	60		11 8 0	1 12 0		9 16 0	
e No Manure	33	60½		9 13 0			9 13 0	

a Produced a larger quantity of straw than 2, 4, and 5, but inferior sample.

b 2 and 4, similar quantity of straw and sample.

c Largest quantity of straw, and worst sample.

d Least, but much the best sample.

The other evening, when we heard the subject of top-dressing

discussed, several were of the opinion that it was advisable where there is a thin, weak plant. I quite agree with them, and could bring many proofs in support of it; but I will only mention one supplied by a much better authority than myself—the late E. Drew. An application of 4 cwt. of Messrs. Proctor's wheat manure per acre, at a cost of 32s., to a thin plant on a light soil, calculating the wheat at 6s. per bushel, and the straw at 20s. per ton, left a loss of 4s. 8d. Guano, under precisely similar circumstances, gave a profit of £1 4s. 9d., and nitrate of soda £3 4s. 5d. The straw and corn, however, from the wheat manure were of a better quality than from either of the others. What I have said only applies to wheats planted on what we call old seeds. A quantity of autumn wheat is planted after roots, and with better results than spring wheat, even as late as the middle of next month: the cultivation is very similar to the early planted. I would only say, where the land has been ploughed deep for the roots, the lighter it is done the better for the wheat; or, if it is to be planted immediately after the roots are off, the cultivator going twice through it will answer better than ploughing. Spring wheat will do well with the same cultivation as barley. Wheat cultivation on heavy soils has been, and can be, much more improved by steam power. The rotation is also very different. One year's ley and beans often take the place of roots, and on very heavy soils the system of bare fallow is practised with success. Ploughing up the seeds early, and working the land with the cultivator and other implements before planting the wheat, is of very great importance. So much having been said at our late meeting respecting the time of planting and the quantity of seed per acre, I think it better to leave this matter until we hear the opinion of the meeting. Barley cultivation is a very important subject, especially in this neighbourhood, owing to the suitability of the soil for growing good barley, as there is a wide difference between the price of a really good sample and an inferior one, and barleys are not so good as they were years ago. Barley requires a seed-bed just the opposite to autumn wheat. A stale furrow and heavy soil are most suitable for the latter, and a fresh furrow and light soil for the former; or, as the old saying has it, "Barley in the dust, and wheat in the dirt." As a rule, we find the early-planted barley the best sample; but I am of opinion that this has more to do with the condition of the soil than with the time of sowing. We all know that it is an easier matter to get a good seed-bed on land that has been fed off early, and raftered immediately after feeding-off—a plan with which I hold. But when a heavy crop of swedes has been fed off through the months of February and March, especially if there has been a quantity of rain and snow, it is almost impossible to get such a seed-bed as one would like; neither is the crop a satisfactory one. It is an easier matter to point out the cause of the bad crops and quality of the barley than to find a remedy, without making such an alteration in the rotation of cropping as, I fear, would not be to the improvement of the land, nor advantageous to the farmer.

After a discussion, it was resolved, "That, on the high lands and light soils of the Cotswold hills, wheat is best grown after a two years' ley, ploughed up in the end of July and through the month of August, then well rolled down, so that, in harrowing and preparing the same for the drill, care should be taken not to break up the bottom of the furrow. That drilling should not commence before the third week in September, and be finished by the middle of October. That it is not advisable to plant more than two bushels of seed per acre; and that only where the plant is thin, weak, or sickly-looking in the spring, it is advisable to top-dress with some kind of artificial manure, say, nitrate of soda, at the rate of 1½ cwt. per acre, or better, the same money value of soot, in the months of March or April."

THE WINFRITH FARMERS' CLUB.

THE VALUE OF FARMERS' CLUBS.

At the dinner, Mr. J. J. BATES, the President, in the chair, Mr. ROBERT DAMEN said the Lord-Lieutenant and Magistracy of the county were a body of exceedingly able men, who took a great deal of trouble and pains in the discharge of their arduous but honorary duties. Their decisions were seldom such as could be found fault with—certainly not oftener than the paid magistracy.

The CHAIRMAN read over the list of prizes awarded for the best root crops grown during the past year, as follows: General root crop—First, £5, Mr. T. H. Saunders, of Watercombe; second, £3 10s., Mr. J. H. Calcrafft, Rempstone House; third, £2, Mr. R. White, Barton. Best ten acres of swedes—First, £3 10s., Mr. J. Scutt, Bere Regis; second, £1, Mr. T. Randall, West Lalworth. Best five acres of swedes—£1 10s., Mr. W. C. Lacey, Bestwall House, Wareham. Best ten acres of turnips—£1 10s., Mr. J. Reader, Winfrith. Best five acres ditto—£1, Mr. Randall. Best ten acres of mangold wurtsel, £2 10s., Mr. W. C. Lacey; five acres ditto, £1 10s., Mr. Sly, Bmdon Mills; two acres ditto, £1, Mr. C. Besant, Shetterton Farm, Bere Regis.

Mr. T. H. SAUNDERS responded for "The Successful Exhibitor." During the time he had been connected with the club he had taken a great many first prizes, and it was again his lot to return thanks for the way in which they had received the toast. He had always studied to improve the quality of the root crops, not merely for the sake of winning prizes, but to secure a good kind of keep for his stock during the winter. He had sworn what he considered was best for feeding purposes, and in this practice he had found it most advantageous to grow all his roots after green crops; he kept no fallow land at all. He must say that, being the winner of the prize for the general root crop, he was somewhat disappointed in not being awarded the prize for the best ten acres of mangolds; but the judges said, though his crop was exceedingly fine, he could not enter for both the prizes. If, therefore, the gentleman who had gained that prize would hand him over half of it he would be perfectly satisfied. Although he did not gain the prize he showed his crop of mangold to the judges, and he would leave it to them to say whether or not he was entitled to half the money. Some people had said that in growing a good root crop he had gone a little too far, and that he had kept more stock than he was justified in doing; but if this was true he considered his landlord had shared the benefit as well as himself.

Mr. J. H. CALCRAFT, who was also called upon, quite agreed with Mr. Saunders that it was desirable to grow a good root crop, but there was a great difference between the land which it was his lot to farm and that around the neighbourhood of Watercombe. Last year the judges awarded him the prize for a good lot of turnips—to look at; but when fed off his sheep did not improve much upon them, and, if the sheep were the judges, they would have returned a very different verdict. But it was an exceptional season, and no doubt these excellent gentlemen who were appointed to view the crops decided in his favour from seeing the turnips in pretty even rows with very few weeds amongst them. His turnips had size in them, but he thought very little nutritive qualities, thus showing that roots grown in bad land would not produce the good effect upon stock that is to be gained by feeding on roots grown in good land. The same rule applied to oats. He once had a fine, upstanding, healthy piece of oats, which produced 30lb. a bushel, but his horses were starving. He observed to his carter that the horses did not appear well, and that their coats did not look so well as they ought to do, thus proving that, although the oats were good in weight, they lacked the properties of nutriment. Thus it was to the advantage of the farmer to improve the quality of his land by every means in his power, and he was proud to appear at this meeting under the shadow of his excellent and experienced friend Mr. Saunders.

Mr. W. C. SPOONER, living as he did at a considerable dis-

tance, was, however, very happy to contribute his mite so as to give a little stimulus to agriculture, more especially in the cultivation of roots. He congratulated the club upon the steady progress it was making, and the sound valuable information it elicited in the interest of agriculture. This he attributed in a great measure to the fact that the members embodied the representation of the various branches of practical agriculture, and consequently more reliance was placed upon the opinions that were adduced at the meetings held for discussion. It was no small matter to have held their own for 25 years, in spite of the opposition which men formerly evinced against meetings for the discussion of agricultural matters, or any other subject in which they were interested. But of late years greater opposition, though of a friendly character, had sprung up, for since the establishment of this club others had been formed at Milborne, Dorchester, Blandford, and elsewhere, while chambers of agriculture had also been organised, each and all of which had their attractions. These chambers of agriculture met in different parts of the country from time to time, and there was sometimes a greater degree of novelty in them than they could boast of in their farmers' clubs. But this he would say, if the tendency of chambers of agriculture was to destroy or to supersede farmers' clubs, they would do more harm than good. There were plenty of subjects to be taken up by both, but it was the province of farmers' clubs especially to deal with matters of practical agriculture. He observed that the next meeting of the Dorset Chamber of Agriculture was to be held on a market-day, and of this plan he must express his disapproval. When gentlemen travelled a considerable distance to attend the corn market, was it not too hard to ask them and their customers to divide the few hours at their disposal, and which should be devoted to business alone, to attend their meetings? If the same system were adopted in other counties as in Dorsetshire, chambers of agriculture must in time fall to the ground, as farmers and those most interested could not devote so much of the best of their time to attend their meetings. He trusted the Winfrith Farmers' Club would prosper for many years to come, and he could not conclude without passing one tribute of acknowledgment to the able and constant exertions of his friend Mr. Reader, who was formerly their secretary. For many years he had well and ably performed his duty, and when they in other parts of the country heard of the distressing illness with which he was afflicted, and which forced him to relinquish the post he had so admirably filled, sympathy for that excellent officer was by no means confined to this club. They in other counties were ready to send up their earnest prayers that Providence might still spare his life, that medical skill might prove successful in his case, and that he might be restored to his former energy and strength to labour for the club, and to see the continued success which he so long laboured to accomplish.

Mr. J. H. CALCRAFT, in proposing "Success to the Winfrith Farmers' Club," said those who remembered this part of the county many years ago could not fail to bear testimony to the great change for the better which had taken place in the general system of agriculture and the state of the crops throughout the whole district. How much the club had had to do with this improvement it was impossible strictly to say; but, as Mr. Spooner had said, it had been in existence for the last quarter of a century, and, as the general root crops had very materially increased, it was only fair to assume that the operations of the club had had something to do with this good result.

Mr. GROVES responded for the judges. One gentleman over whose ground he rode, produced a bottle of port 50 years old, though he would have preferred it rather more fruity. Another gentleman drove him about in his high carriage, and, although there was some hard work attached to the office of judge, the labour was interspersed with many little pleasantries. On some of the land over which he travelled

there was a swarm of "villainous game," and he regretted to see so many hares and rabbits perpetrating such damage among the crops. He suggested that in future judges should be allowed to carry a gun a-piece, so as to "combine pleasure with business," as it was a shame for gentlemen to allow such a lot of trash to infest the farmers' crops. The crops generally, he said, were excellent, and he never saw land better managed than in this district. It was almost as good a specimen of farming as they witnessed in the neighbourhood of Milborne.

Mr. W. MARK proposed "Success to the neighbouring Farmers' Clubs," and spoke of the vast amount of good they had effected amongst the agricultural interest. He was glad to find there were so many well organised Farmers' Clubs in the county, for, recollecting that "union is strength," it was only by uniting their efforts that any real benefit could be accomplished. For his own part he had derived much profit from the practical discussions on agricultural matters to which he had listened, and he trusted that the clubs may continue to receive the support they so eminently deserved.

Mr. T. H. SAUNDERS, the Vice-chairman, said they well knew it cost £100 a-year more to keep a farm in good order than in middling condition; besides he could speak for himself as to the extra expenses on his own farm, which had increased £180 a-year on labour and rates within the last ten years—a heavy item which neither landlord nor tenant had any control over, but it was a burden for a tenant farmer to bear, and it ought to be looked upon by the landlord as a rise of rent to that amount, which it virtually amounted to. What he called the fair rental of a farm was what was left after all the incidental expenses were paid and the tenant had received the fair interest on the working capital he employed. He did not believe many of them realized half that amount. However, he should be satisfied if it stopped here; but no—after they had worked hard in the endeavour, as they thought, to help their landlords, what was the result? As soon as they had their farms in good order, at a very considerable outlay of their own capital, many of their landlords increased the rents. He did not mean all; he mentioned no names, nor did he allude to any individual in particular, much less landlords members of this club; but it seemed to have become the order of the day—except with a few whom he called patterns for Dorsetshire landlords, who had tenants from one generation to another, and who never thought of raising their rents (except when deaths occurred) while farms were kept in

good order—that at the end of the year, or the expiration of the lease, the landlords said to them, "I don't want to get rid of you, but I think your farm is in good condition, and I therefore want a little more money." Then a surveyor was sent over the farms, who knew the rent must be increased, be it ever so high before, and when the tenant had expended a large amount of capital to improve it, without suspicion of being so unfairly taxed with additional rental. On the other hand, if they had only used the natural power of the soil previously, they might have done better for their families, and the rents would not have been advanced. Therefore, he said, where was the advantage in farmers' clubs endeavouring to get the land in the best possible order to help their landlords and at the same time to ruin their own families? He considered they ought to be satisfied with a good enterprising tenant instead of raising him £50 a-year, and as soon as he is obliged to quit, to lower it £100 a-year again before he can find a middling tenant to take it, which by experience they knew was oftentimes the case. The principle reminded him of the man in the fable who had the "goose that laid the golden egg," and killed it in order to have all the others at once. He admitted the legal right of the landowner to let his farm to any person who chose to give the most money for it; but he did not call it justice to any old tenant who had spent his own capital and was obliged to leave it in the land for another's benefit. He had always advocated good farming in this room, but he now saw his error; but as a practical man of experience he could not any longer do so. He could not wear two faces under one hat, and it was on this account that he had sent in his resignation. It had often been talked about privately that it had been the case as he had now stated, but as they lived in a free country, he, as an Englishman ought to do, spoke openly on the matter, he hoped without offence to any one. He had only expressed what he believed to be the truth. They as farmers had not been rewarded as they expected when they formed this Club, and there were many ways of raising their rents besides in money payments—some in covenants, and, worst of all, to have their crops eaten up by rabbits and hares. They had stood a long trial and had unexpectedly lost the verdict. Therefore he bade them farewell, hoping that landlords who had any respect for their tenants would never think of increasing their rents, with wheat at £10 or £11 a load, and this was the great barrier in the way of the improvement of English agriculture.

THE PROFITABLE TREATMENT OF WOODS AND WASTES.

At a meeting of the Botley and South Hants Farmers' Club, Mr. BLUNDELL said: I am bound to say that I have for a number of years considered that the question now for discussion is one which has been comparatively neglected and overlooked amongst the more exciting subjects, such as steam cultivation, and others, which have for some time past commanded a large share of the public attention. It, at the same time, seems to me, looking at the position of the agricultural interest generally, that our subject, if practically considered in all its bearings, is one which, if well ventilated, will show how desirable it is for the interest of landowners, occupiers, labourers, and the public generally, that the capabilities of the woodlands and wastes of this country should be better understood and appreciated, for whether we look to the production of timber of various kinds, or whether we look to the produce of corn and cattle, it is a question of the deepest importance to the welfare of the people of this country, inasmuch that the nearer approach we can make to the universal appropriation of the whole surface of the land for productive purposes, just so much nearer do we advance towards being able to support our own population without foreign importations, and I trust that before the conclusion of this discussion, it will be shown how large and valuable a property in the "woods and wastes" has been neglected, and how extensive and important are the resources existing and ready to hand if profitably managed by the judicious employment of labour and capital thereon. It is rather singular that only one subject at all like the present one was ever taken up by this club during the past twenty-five

years, which was "The removal of hedgerows and hedgerow timber." That, however, must be viewed as a very narrow subject as compared to ours on the card. This subject seems naturally to be divided into two sections. I therefore propose to consider—first, the treatment of woodlands, and, secondly, the treatment of wastes and common lands. Let us, therefore, in reference to the woodlands, inquire how profitable usage of the land can be obtained, either by retaining it as coppice, or by conversion into arable or pasture land; and I propose to bring to your notice, the better to illustrate our subject, a certain number of woods and plantations, with the view of showing by calculation, whether they are advantageously to be retained as woods or otherwise, and in doing this I shall select some pieces with which I am somewhat acquainted, and which, at various times, have come under my notice during my business engagements, in different parts of the country. No. 1 is a piece of woodland, about 20 acres, the soil being a good loam on chalk. There is no timber, but it is well stocked with ash and hazel underwood, used for hop poles, hurdle making, &c. The produce is usually cut at twelve years' growth, and is worth £16 per acre; the adjoining land is arable, and is worth to rent 28s. per acre, thus showing that but little if any advantage could be derived by bringing this woodland into cultivation, except it were for the improvement or the better laying out the adjoining fields, which latter points must always be viewed as important matter. No. 2 is a precipitous piece of woodland, of about 35 acres, in a western county, on the stone formation, with very little timber, but a good plant of under-

wood, chiefly of oak stems, which grow very quickly in their moist climate, and is usually cut at eighteen years' growth, the time for cutting the largest stems being deferred until April and May, the wood being commonly stripped for the sake of the bark. In this particular wood the land is so steep that the men employed in cutting can scarcely keep their footing. This wood, after being barked, is used for making hurdles and other purposes, and yields a return which could not be surpassed by any other known usage, the land being too hilly and too near the naked stone for cultivating or planting. No. 3 is a level piece of woodland, in a southern county, and is situated a long distance from chalk or marl, contains about 16 acres, is surrounded on three sides by arable land, the value of which to rent is 30s. per acre. The woodland is of the same description of soil, which is strong and gravelly, but does not require draining. There is a good plant of timber, principally oak, about 160 trees per acre, a large proportion having been left from stemmers. It is only those which have proceeded direct from the acorn that make any perceptible growth. The underwood is very rough and bushy, not worth more than 40s. per acre at 10 years' growth. These trees do not meet in measurement at more than 4 feet of timber, and do not increase annually more than $\frac{1}{4}$ per cent. on their value. The following calculation will show the propriety and profit of taking the crop of timber and converting the land into arable:

	£	s.	d.	£	s.	d.
Expenses—Grubbing, per acre	10	0	0			
Chalking.....	4	0	0			
Outlay	14	0	0			
Interest on, at 4 per cent.				0	10	6
Value of 160 trees, 8 ft. meetings, 640ft. at 8d.	21	6	8			
Annual increased value on the same, at $\frac{1}{4}$ per cent.				0	6	6
Value of underwood	2	0	0			
	23	6	8			
Annual value of the underwood				0	4	0
Total annual value of woodland in present state ...	1	1	0			
Value of land to rent per acre after grubbing, being tithe free				1	4	0
Gain by interest on value of timber and underwood sold off, £23 6s. 8d., at 4 per cent.				0	18	6
Value after grubbing	2	2	6			
Ditto before ditto, deduct	1	1	0			
Actual advantage of converting into arable	1	1	6			

No. 4 is a piece of woodland, of about 11 acres, on the same description of soil as No. 3. The timber is for the most part oak, about 100 trees to the acre, at 6 ft. meetings. The underwood is of the same inferior description and value as No. 3, say 4s. per acre per annum. This coppice of timber was much more growing than No. 3, and would increase in value about 3 per cent. per annum. This wood is introduced to notice for the purpose of showing the advantage or otherwise of a plan which obtains in some parts of England, viz., stubbing or grubbing the underwood, with the view of obtaining pasture. In this coppice, however, the grubbing between the timber which is left has cost £6 per acre. The feed of this land is of the poorest description, and not worth more than 7s. per acre rent. The timber, I estimate, instead of paying 3 per cent. in its growth, is so much injured by letting in the wind that it will not now increase at the rate of more than $\frac{1}{4}$ per cent. It will, therefore, be readily seen that this coppice has not been properly treated. Had it, however, been brought into cultivation it would have paid as well as No. 3, and, being surrounded by arable land, would have greatly improved the adjoining fields, especially as the boundaries are of an irregular and zigzag description. No. 5 is a good piece of woodland, about 24 acres, in a southern county; the land is level, consisting of a fine hazel loam, surrounded entirely by arable fields of the like soil, and worth to rent 35s. per acre. There are about eighty trees to the acre of 8 ft. meetings, and all oak. The underwood is worth £2 per

acre, at ten years' growth. These trees have been nearly all let up together, and they should stand or fall together. I, however, estimate that they annually increase in value about 3 per cent. only. This land under cultivation would be worth 40s. per acre rent, being tithe free. In this case also we must not lose sight of the immense benefit to adjoining lands by the removal of this wood. Let us now calculate the advantage of bringing this land into cultivation:

	£	s.	d.	£	s.	d.
Expenses—Grubbing per acre	10	0	0			
Chalking.....	4	0	0			
Outlay	14	0	0			
Interest on, at 4 per cent.				0	10	6
Value of 80 trees, 8 ft. meeting, 640 ft. at 1s. 3d.	40	0	0			
Annual increased value on the same, at 3 per cent.				1	4	0
Value of underwood	4	0	0			
	24	0	0			
Annual value of the underwood				0	8	0
Total annual value of the woodland in its present state	2	8	6			
Value of land to rent per acre after grubbing, being tithe free				2	0	0
Gain by interest on value of timber and underwood sold off, £24, at 4 per cent.				1	15	2
Value after grubbing	3	15	2			
Ditto before ditto, deduct	2	8	6			
Actual advantage by converting into arable	1	13	8			

No. 6 is a poor soil, being a mixture of sand and gravel, with a blue pebble in it. This wood is also in a southern county, extends over about thirty-four acres, and is bounded on two sides by good roads. There is no underwood, but ferns grow strong. Some fifty years ago it appears to have been planted in an irregular and careless way with Scotch fir, some of which having been cut at intervals, there are now only a few trees left, probably about forty to the acre. They are now quite fit to cut, and it is easy to see how little gain has been or can be derived from timber left in the manner described, and it should be borne in mind that although this land is too poor for corn growing, yet it is such as would be profitable under a course of cropping for timber upon a plan which I intend presently to explain. In the immediate neighbourhood of this woodland there are large tracts of land, belonging to different proprietors, exhibiting precisely the same state of neglect. No. 7 is a poor hillside on a chalk soil, and contains about 17 acres. It is well planted with beech wood, there being about 160 trees to the acre, and of course no underwood, as the beech, like the uper tree, suffers nothing to exist under it. This timber is nearly arrived at maturity—that is, it would pay better to cut than remain, because the interest of money would pay double that of the growth of timber, and under the plan to be offered to your notice the land may be planted with fir, and continue to be more remunerative. No. 8 is a plantation of Scotch fir on some of the poorest soil in Hampshire, with a regular plant of about 200 trees to the acre. This plantation is deteriorating every year; the trees were planted about fifty-five years ago, therefore the crop should be taken for what it will fetch, when the land may be planted with superior kinds of fir to be hereafter alluded to; and I would here remark that it would be just as reasonable to allow our crops of corn to stand in the field for months after they were ripe as it is to allow plantations like this to remain when they may be sold to the best advantage and the land cleared for another crop. Having endeavoured to show that wherever the land is adapted for arable or pasture in the majority of cases the most profitable treatment is to cut the timber and invest the money to grub and cultivate the land, except in cases where the land is too poor for corn or grass produce; I will now proceed to state several plans or systems of planting fir, pines, cedars, &c. for profit. First is a method of planting larch fir for a quick and profitable return. The land should be trenched or steam cultivated not less than eighteen inches in depth; the use of fresh, strong

manure should be avoided, although good vegetable mould may be applied with advantage on very poor and stony soils. The plants should not be too large—say about 24in. to 30in. high; and if they have been grown and previously transplanted on poor soil so much the better, if they are healthy, clean grown and well rooted. The first two years after planting the land should be kept clean by hand-hoeing. Particular attention should be paid during their growth by the removal of diseased or decayed plants, and as soon as the poles are marketable (which they will be by taking the best at the end of eleven years) commence by thinning and selling, looking only for a quick return. I believe a great mistake is made by many, who allow the plantation to go on unnoticed until the plants are neither fit for one purpose or the other—not large enough for sawing into rails, pales, &c., yet having passed the size called poles. It often happens also that the plants are set at too great a distance from each other; the consequence is they do not grow so fast, neither do they make such handsome poles. When planted close they protect each other, the winds take less hold of them, and they gather more moisture from the atmosphere in the summer months. They cover the land quicker, keeping in check both grass and weeds. Again, instead of growing boughs, the growth centres in the poles, which come earlier for use in consequence. In following the above plan the plants should be set at thirty-six inches by thirty inches apart. I will now furnish a statement of the cost of planting, and also the mode of taking and the value of the crops per acre:—

Expenses—Trenching 18 inches deep, at 1s. 9d.			
per rod	£14	0	0
5,250 plants, at 25s. per thousand ...	6	11	3
Planting by spade	2	10	9
Hoeing... ..	1	0	0
	<hr/>		
	£24	2	0
Interest on the outlay of £24 2s., at			
4 per cent. for sixteen years ...	15	9	4
Failures allowed, at 10 per cent. ...	7	15	0
	<hr/>		
Total expenses of plantation...	£47	6	4
Commence cutting, taking the best at the—			
11th year cut 600 poles, at 3d. each ...	£7	10	0
12th year do. do. ...	7	10	0
13th year do. do. ...	7	10	0
14th year do. do. ...	7	10	0
16th year cut the remaining 2,850 poles, at 4d. each ...	47	10	0
	<hr/>		
Value	£77	10	0
Cost	47	6	4
	<hr/>		
Profit	£30	3	8
Annual profit, 38s. per acre.			

As, however, the plan of quick returns, as just stated, by the growth of only larch fir requires a great deal of constant attention, some parties may object to it for that reason or others. I will, therefore, allude to a plan whereby a less number of plants may be set, and take the crop at the end of twenty-five years, and in this case, if required, rows of sweet-chestnut, hazel, ash, &c., may be planted, with the view of remaining for the growth of underwood after the crop of poles has been sold off. Planting is advised in the following way—larch fir plants at intervals of three feet and six feet alternately, and at three feet apart in the lines, the six feet space being planted with underwood plants at three feet apart. Then, at some intermediate time, each line of poles at three feet apart may be cut and sold, as also half the poles in the remaining line, thus leaving the lines of furs standing for the main crop at six feet apart each way, and the underwood plants will be found standing also at the same distance. According to this plan there would be left at the end of twenty-five years about six poles to the rod, which at 1s. each, would give £48 per acre, being a large return, in addition to the valuable plant of underwood left on the land. There is yet another system of planting fir and pines or cedars to which I wish to call attention, more particularly where it is intended that large trees be the object to be attained. In such case I should plant three sorts in alternate rows, or, rather, at right angles. The sorts

I recommend are the cedrus deodara, the Douglas fir, and the common larch fir. The first row to be cedrus deodara, with larch alternately at equal distances; the second line all larch; the third line Douglas fir with larch alternately, at the same distance apart; and the fourth line with all larch plants. Then proceed with cedrus deodara and larch as for the first row, and so on throughout the plantation, the distance recommended for the plants being about six feet apart each way. In thinning out the larch they may remain until worth about 1s. each, which they would be at about eighteen years' growth, thus leaving the cedrus deodara and the Douglas fir for the main crop, these sorts being calculated to grow to an immense size and height if properly set out at the right distance, which distance, as proposed above, would be twelve feet from plant to plant each way. The cedrus deodara and the Douglas fir, as I believe, have not been cultivated for profit in this country, but only used for ornamental purposes. In the latter respect they are comparatively well known, and I am only justified in introducing them to your notice as profitable timber producers through the high encomiums passed on them in a work called "Pinacea," which is the soundest practical treatise on fir and pine culture now extant. I, therefore, to justify my recommendation for planting, quote from this work the writer's opinions on their growth in their native habitats, and his experience as their adaptation to our soils and climate in England for timber growing purposes, and, relying on these statements, we are justified in assuming that their growth here would be profitable, not only as regards the bulk of produce in timber, but its utility for all ordinary purposes. In order, however, to obtain plants of these cedars and pines, they must be raised from seed, as they cannot now be obtained from the nurseries except at a very high charge, they being grown for ornamental purposes only; and in growing plants for own use they should be grown in soil and climate similar to that where they are to be planted. In conclusion of the first part of our subject I wish to make a few general observations. Trees for timber in woodlands should never be lopped or shrouded, nor should trees be ever left within twenty feet of the boundary fence joining arable lands. In making plantations upon land which is too wet, instead of underdraining, as for corn land, it is best done by opening trenches from two to three feet in depth, and from twenty feet to thirty feet apart, according to soil, as pipe tile draining in woodlands would soon become choked and useless. Steam cultivation I have seen successfully done in bringing heath land into cultivation, at a cost of about 30s. per acre. It is also recommended with sufficient power as the means of grubbing ordinary coppice land, including the lifting of tree stools, at a cost of from £3 10s. to £5 3s. an acre. In the foregoing pieces of woodland noticed, I have made no statement of draining such lands as require it, because it is only to add the cost of draining to the other expenses, and charge interest upon, which would still leave a large profit. In entering upon the second part of the subject, "The profitable treatment of wastes," there is indeed a wide field before us, and the subject seems so extensive that I almost wish it had been kept for a future meeting and discussion. To proceed, I beg to observe that nothing has contributed so much to the improvement and bringing into cultivation the waste land and commons as the late Enclosure Act, and I know of no Act of Parliament in this country which ever answered better for the purposes for which it was intended, and it is to be doubted whether any part of England has benefited more by it than the district of this club. If we look back twenty years we see that during that period a large extent of waste land has been enclosed, and where capital has been expended and intelligence has been displayed in breaking and cultivating, the land generally has been remunerative. In naming a few of the most important enclosures, many members will recognise their own property, for many present have been participants in the allotments as well as myself. We have seen Curdridge Common, Botley Common, Bursledon Common, Waltham Chase, Strood Wood, Titchfield Common, Netley Common, and others enclosed, all of which are now, or might be made, productive, the largest portion for ordinary agricultural purposes. Some of the poorest portions, the sand and gravel soils, are, however, best adapted for plantations—for the growth of timber only. The waste lands, within our recollection only affording a very scanty herbage for cattle or turbarry for the cottagers, are now for the most part, through the enterprise of individuals, made productive of corn and cattle in abundance; and one of

the most striking features in the case is that, generally speaking, very few persons entertained the opinion that large portions of the land could be made productive. There are not wanting instances, where the land has been properly handled, which have completely falsified the general opinion, and the example of a few is now operating on the minds of the many, and the work of breaking up and cultivating goes on with accelerated speed. No doubt a considerable portion of the land not broken at present is because the owners believe it will not pay for the outlay, and this is the case, no doubt, in some instances where the land is now under cultivation. It is too poor for corn or grass production, but I venture the opinion that there is no part of any of these enclosures but may be made profitable under a system of planting designated by the modes of planting firs or pines before alluded to. The great merit, however, of these extensive enclosures consists in the fact that wherever manorial rights or individual and private rights existed in connection with these wastes, it has resulted in a transformation of the face of the country truly marvellous in comparison with its former state. I shall not take up your time by going into the best methods of grubbing and cultivating new land, for the results of enclosing land in this neighbourhood show that it is generally well understood. Although I have said much in favour of private and individual enterprise, what am I to say when the truth must be told of the wastes, forests, and commons, called Crown Lands, in this country? Suppose a foreign agriculturist on visiting this country to land at Portland and take train at Weymouth, proceeding by way of Southampton to the metropolis (and it required but little stretch of imagination to anticipate the conversation with a fellow-traveller), he would very naturally exclaim "Can this be England? a country whose boast is its agriculture!" 'Tis true he catches a view of a few districts of well-cultivated land; but so large a portion being waste, or forest land, he would be struck with astonishment, more particularly when it is stated that the wild and barren districts mostly belong to the Queen, and are in the hands of the Government, whose Commissioners of Woods and Forests have the management. I am sure you will agree with me that it is a matter of severe reproach to this country that the Crown lands not required for the growth of timber should fail in producing a large revenue and a large increase of employment and food for the population. My ideas as to how this might be done are as follows:—Take the New Forest, for example, although this forms only a portion of the Crown lands, and see how it might be turned to profitable account. About fifteen years ago, if I am rightly informed, an Act was passed which authorised further enclosures for planting trees, and other matters; after which a commission was appointed for defining all rights and interests of parties claiming in respect of cattle feeding, turbarry, &c., and I assume that as these rights have now been defined it would greatly facilitate further operations, because those parties having rights might now be paid the equivalent in land allotments. I would therefore suggest that the Government should proceed to dispose of the land by selling under lease for the longest term, in the following manner. There are large portions of land contiguous to estates adjoining the forest, which might be offered for sale in suitable lots, having due regard to these estates, which would sell readily; this, as the first operation, would absorb and dispose of a considerable portion of the land. There are also numerous and fine building sites in the Forest well adapted for the erection of country seats for gentlemen of property, by whom they would be readily purchased, together with some number of acres of land adjoining, especially if the timber on the land were sold with it, this timber being in most cases quite useless for navy purposes, but generally well adapted for ornament and improving the landscape. I have no doubt some of these building sites would realise long prices per acre. The sale of other parts of the land may be made by offering it for farming and other purposes. In fact there is no part of the Forest but would sell well, for it is capable of being turned to account in various ways, some as arable, some as pasture, and the very poorest is well adapted for the production of firs and pines, if properly planted. In order, however, to make the most of these sales, the land should first be intersected by good roads, and main dykes for drainage. It appears from a report made to the commissioners in the year 1854 that the New Forest contains 68,000 acres. This includes, however, large plantations of oak, which have been made from time to time by the

Crown, ostensibly for the purpose of the growth of timber for the navy. It is in consequence difficult to say what quantity of land is still in a waste and unproductive state, but it must be extensive, as the map which I now produce will show. I trust that you will agree with me that this now picture of desolation may be converted into a flourishing and productive district, yielding an enormous revenue to the Crown.

Mr. PURCHASE said larch fir and ash should be planted at a distance of 24 inches apart. He recommended the following mode of cultivating waste land, taking, as an example, one acre. Fir plants, 8,800; ash, 1,440; total, 10,240 plants, distributed thus: First row, larch; second, every alternate plant, ash; the cutting to commence at the end of the eighth year, and the whole should be cleared sixteen years after planting. The cost of trenching would be £12; plants, £12 10s.; planting, £5 10s.: making a total of £30 per acre. Then the rent of land at 10s. per acre for sixteen years would be £32; add for the cost of trenching, plants, and planting £62. The ash, forming one-ninth, he claimed the same proportion, £6 17s. 9d., from the £62, leaving £55 2s. 3d.; the interest on £30 at four per cent. for sixteen years, £19 4s.; making the total £74 6s. 3d. He would commence cutting the eighth year, when the produce would be 1,280 poles, which would realise, at 3d. each, £16. The ninth, tenth, eleventh, and twelfth years would yield 8,840 poles, which, at 3d. each, would amount to £448. The thirteenth, fourteenth, fifteenth and sixteenth years producing 1,920 poles, at 3d. each, would amount to £24. Then the 7,040 poles sold would realise £88; from this take £74 6s. 3d., the total cost, it will leave a profit £13 13s. 9d. per acre, and a plant of ash would be left on the land to go on for a future crop. Mr. Purchase observed that he had allowed eleven plants per pole, or 1,760 per acre, for losses and failures. It was a mistake in planting to place the young trees too far apart, for by placing them closer together they nursed one another. The head of the plant was the conductor of moisture.

Mr. WARNER, the chairman, agreed with Mr. Purchase that, up to a certain time, larch could not be planted too thick, but beyond that time they would destroy each other. It was like leaving turnips or other plants too thick. With oak timber the thinner it was set out the faster it grew.

Mr. Purchase recommended that the larch should be planted too feet apart each way.

Capt. MAXSE observed that he simply attended that day for the purpose of gaining a lesson in woodland growing, and had received a very valuable one from Mr. Blundell. He could most thoroughly corroborate his statement with respect to the Douglas fir, having planted some himself, which had made such progress in three years as astonished him. With respect to waste land, he had taken every possible opportunity of entering a strong protest against a system which permits so much waste land to exist as was now found in this country. There was great agitation now going on in London in favour of emigration, in which he had been asked to take part, but refused, because it seemed to him perfectly absurd to think that the solution of our pauper and criminal problem could be found in emigration whilst the waste lands of the country remained in their present state. He believed that not less than one fourth of the cultivable land of England was now out of cultivation, and that this was not confined simply to Crown lands, but included that of private individuals. Mr. Blundell had referred to the enclosure of commons which took place some years ago, and had he known this discussion was going to take place, and that Titchfield common would be referred to, he would have brought with him certain statistics relating to that common, which was allotted upon the principle of large parcels to large landowners and smaller quantities, down to a rood, to small proprietors; but of the large allotments he did not think there were more than three or four in cultivation, whereas the whole of the small parcels were being cultivated, and he thought this was sufficient to justify their asking that in the event of there being any future allotments of the kind they should be made upon the modern principle—namely, with a condition as to their cultivation. He said modern principle because in a recent grant respecting the oyster fishery in the Hamble river certain rights therein were granted to gentlemen under a new act upon condition that they used their best exertions to utilise that river and cultivate its resources. He should like to see a small tax, to

be determined by a body of scientific gentlemen, levied upon all cultivable land left out of cultivation, on the principle adopted by the United States, as he believed that would induce owners to cultivate it:

The CHAIRMAN: You can rate it at what it is capable of producing.

Capt. MAXSE: Just so. His land on Titchfield Common paid him very well. He supposed that it cost him about £12 per acre to get it into cultivation, but he at once received 30s. per acre, putting it at the smallest rent, and if that did not pay him he knew not what would. But, apart from this, he held very strongly that the remedy for pauperism was the application of waste labour to waste land.

Mr. SPOONER said any one living in the neighbourhood of the New Forest must be impressed with the fact that this subject required ventilation—that it could not be right for a country like England to be continually sending its population to other lands, and at the same time to allow so many thousands of acres to remain unproductive, more especially when there was no longer a plea for preserving it to grow timber for the navy. The subject divided itself into two parts—one, what kind of land would pay for cultivation, and what the value of the land should be that it might pay; the other part related to Crown lands. He thought that cold clay lands now kept on estates for the growth of underwood would not pay for cultivation nor to break up for pastures, but there were no doubt thousands of acres in the Forest which could be made to yield a greater return than by keeping them in their present state, and, after passing through the Forest thousands of times he could not help thinking its present state a standing disgrace to the country. The Commission which had sat to define the rights therein had done but little, beyond rectifying a few abuses, to benefit the country at large, the Commissioners having taken the very best parts for planting and left the barren places. The fee value of some of the land was valued several years previously at 1s. 6d. an acre, but he was puzzled to know by what particular calculation they arrived at this result. Whether it was supposed to keep the twentieth part of a cow, or the sixteenth part of a jackass (laughter) he could not tell, but he supposed it must have been by some such a process. He should like to hear a practical opinion whether the forest could not advantageously be planted in the barren parts (Voice: "No doubt about that"), because if this could be done there was no reason why the better land should not be sold for the purpose of building or creating estates. He condemned the ancient practice of allowing turf to be cut, as tending to impoverish both the foresters and the Forest itself, by denuding it of soil, and by leading people to cut that which was not worth the carrying home as fuel, and concluded by suggesting that two resolutions should be passed—one affirming the desirability of converting the wood into arable and where this could be profitably done, and the other for profitably utilising the Crown and other waste lands.

Mr. FLETCHER thought there was no portion of the Forest but would grow Scotch fir, and larch might be grown as well, nor were there any portions of it which might not be more profitably used. In certain parts alderwood—a most remunerative wood—might be cultivated. He thought he had been in every county in England, and he could name two or three enclosures in the Forest which contained the finest plantations of Scotch firs he had ever seen. He favourably noticed the management of the deputy surveyor and his officers, to whom great credit and praise were due, and he only wished that their neighbours thinned their plantations so regularly and well as the Forest was thinned. He believed he was justified in saying that the returns for fir were now equal to those for oak.

Mr. FLETCHER, in answer to Capt. Maxse, said there was corn-growing land in the Forest, but, no doubt, the best portion had been taken for the growth of timber.

Mr. JOHN GATER agreed with Mr. Blundell that the best use which could be made of some kinds of land was to plant it with different kinds of firs. A great deal of success or otherwise depended on the selection of the firs, and hundreds of acres lying waste in this country might be advantageously turned to account in this way. As to the New Forest, he thought that when more than half the bread of this country came from abroad we might well turn our attention to applying the many acres of waste there to the raising of corn, and he agreed with Capt. Maxse that our waste labour ought to be turned to a more profitable account. He had no doubt when

Capt. Maxse spoke of waste labour he included our criminals, whom the colonies would not consent to receive, but who might, under a strict guard, be employed in the cultivation of waste lands. No doubt to bring the New Forest into cultivation a heavy expense for drainage, &c., would first have to be incurred, but steam cultivation might be brought into requisition, and an impetus and help given to many mechanics and skilled men, of whom there were so many scores out of employment where there was only one agricultural labourer. He was about to start a steam engine, and he had had 50 applications for the position of driver by good and well-educated men. There were good roads at present in the New Forest, but more were wanted, for a large portion of it was well adapted for gentlemen's seats, having a southern aspect, and good, hand-some timber, such as would fetch large sums on a building site. He thought such places should be offered on long leases, or sold, and what was too poor to invite the attention of the capitalist might be planted, and profitably planted, at the expense of the country.

Mr. ROBERTS thought the subject too large to be discussed in an adequate manner at one meeting, and that the second part, as to the application of the waste lands of the country was sufficiently wide and interesting for a discussion by itself. He had not yet heard how much land in the New Forest was really cultivable with profit. He disagreed with those who thought that gentlemen's seats increased the productiveness of a country; for he could not see how turning land into parks and preserves could be called profitable cultivation. In reference to utilising waste labour, he had for some time past been putting to a practical test the labour lying unproductive in the Winchester Union, and applying it to the cultivation of the land. He referred to a most valuable instrument called a "grubber," which had been recently brought under his notice.

Capt. MAXSE remarked that, when he spoke of applying waste labour to waste land, he merely wanted natural causes to operate in a demand for increased labour, thus using it up.

Mr. PURCHASE gave some explanations as to the course he had pursued in regard to his allotment on Titchfield Common, and added that he was satisfied its reclamation would pay him well.

The CHAIRMAN said no doubt there were in this country many woods that could be profitably broken up; and he had himself done so on land which, in its natural state, only produced 5s. or 7s. an acre, making it now worth 30s. or 40s. an acre. There were doubtless some sorts of land which it would be more profitable to retain as underwood; but there were not, he believed, many large estates in this country which would not pay for the conversion of some of the land into arable, whilst there were hundreds and thousands of acres belonging to private individuals, and now growing nothing, which might be profitably planted. There were thousands of acres now growing nothing but heath, not bringing in 1s. an acre, which, if planted with larch fir, would pay 15s. or 16s. an acre. This, too, would afford employment for a great deal of labour; and if gentlemen, instead of assisting to send our labourers and artisans abroad, would but employ the money they thus spent in increasing the productiveness of their own lands, there would be no need for sending the bone and sinew of the country to other lands (hear, hear). Emigration, instead of being made a panacea for all the ills we were enduring, might be made a great evil, for a large population in a country was an advantage instead of a disadvantage, and if every gentleman would look round to see where he could profitably employ his money, present distress could be materially relieved, and the whole country benefited. Capt. Maxse referred to the quantity of land at Titchfield which remained uncultivated, and suggested that a tax should be put upon it, but the only practical way of dealing with it, perhaps, would be to put on it the fair rate at which it would be rated if cultivated. This would induce its cultivation by the landlord. With respect to the New Forest, which he had traversed scores of times, he believed there was not an acre there which might not be profitably cultivated either for corn or timber, if they would only put the right plant upon the right soil. The secret of successful timber growing was attention to thinning out. His father had some timber valued and re-valued in twenty years. It paid but 3 per cent. whilst standing, but if he had cut it down at the first valuation he might have secured 5 per cent. for his capital, and the land at another use. As to keeping the forest for the production of oak, he recollected when it did

not pay its own expenses, and that might possibly be the case now.

Mr. BRUNDILL in his reply, said there was one thing he had omitted to notice in his paper—the damage done on so many estates by the hedges and hedgerows. There was not a hedgerow in Hampshire paying more than half the money the trees would pay as interest if cut down and turned into money, to say nothing of the damage done to the adjoining arable fields. With regard to the New Forest as a hunting field, it afforded no better sport than the upper parts of the country, and he insisted that even if there were any grounds for such a preservation of it, the necessities of the population were paramount to every other consideration, and these loudly called for its cultivation in the best parts, and planting in the others. Much of the land had been planted for the growth of navy timber, and he maintained that there was scarcely an acre in the forest that could not be made highly valuable. A league, called the Emigration League, had recently been formed in London, to which one nobleman had subscribed a thousand pounds, and he should like to know how many uncultivated acres he possessed on his

estate, for he warranted that he could show him how he could improve his estate and keep his money at home. When by these means the working bees were taken out of the hive how could we wonder at pauperism increasing? It was estimated that fifty miles of railway absorbed a farm of 300 acres, and when we reflected on the land taken out of our limited area in this way and for manufactories it behoved us to try to compensate by cultivating all available land.

The following resolutions were unanimously adopted: 1. That large portions of land in this country now devoted to woods, plantations, and commons, would pay to break up and cultivate, and give profitable employment to the waste labour of the country. 2. That it is the opinion of this club that the most advantageous plan for dealing with Crown lands, such as the New Forest, would be, after satisfying by grants of land all just claims, either by the Commissioners of Woods and Forests or of private persons, to offer to public competition all the remaining lands.

Votes to Mr. Blundell for introducing the subject and to the chairman for presiding brought the meeting to a close.

GROWING HOPS LIKE VINES.

At the December meeting of the Maidstone Farmers' Club, Mr. T. Bridgland, jun., in the chair, Mr. COLLEY attended to explain his new system of hop-growing. After showing that it was adapted to every kind of hops and form of planting, whether square or triangular, he spoke in detail to his system, illustrating it by a model. He urged that this new invention, which has many, and some important, advantages over the old style of poling, can be applied to every kind of hops and forms of planting, whether square or triangular, but it is best suited to a square plant. To commence with this method, two stout poles, moderately straight, are required to each hill as permanent uprights. For Colegates or Golding hops 16 or 18 feet poles may be reduced to 12 feet in length, sawing the tops of the poles in a sloping direction. When these poles are sharpened, they should be thoroughly dipped 30 hours in good creosote at least 26 in. up, and when taken out of the dipping tank hot, which should always be their state, the dipped part should be dusted with lime, slacked for the purpose, or hot ashes from under the tank will serve as a substitute. This absorbs the slimy moisture about the foot of the pole, causing a kind of cement scale or covering, which the fibres of the plant and also the hop roots will more freely approach without being checked by the creosote on the poles. Next, bore a hole through each pole two inches below the top at the side of the sloping cut, large enough for No. 6 or other wire to pass through, which wire is to be cut 12 inches in length. Pass this wire through the hole not quite half the length, and turn up both ends; then press them in a vice close to the pole. Fix a small staple (special for the purpose) driven against the longest side of the wire to prevent the fork (now formed) from turning down, when the top parts of sloping poles are resting between these wire-guards. The permanent poles being prepared should now be placed to the hills from 2 feet 6 inches to 2 feet 8 inches asunder, and not less than 20 inches in the ground, carefully set up by line. If done when the land is in a moist state, the labour will be much less, and the poles will stand more firm than if done when the soil is dry and hard. At this stage, it is indispensably necessary to consider the ground level, which in a great measure should be yielded to, advantage being taken to turn all the tips of the sloping poles to the rising ground, preference being given to the north and south aspects. If the land rises fast eastward, then follow the rise, with the tips of sloping poles; but if to the west, it is better to cross the hilly ground than point to that quarter. When the uprights are so placed, a wooden brace should be nailed across about 4 feet from the ground, to keep the poles a due distance asunder; and however strong the wind may blow, this is a perfect remedy for unsteadiness. A wire staple, two inches wide, should then be placed in each upright pole, about 4 feet from the ground, little more or less, as required. This staple should pass through the pole and clinch, being fixed, to carry the foot of the sloping poles, two of which are required to every hill. These sloping

poles may vary from 10 feet to 14 feet in length, according to the strength of soil and the kind of hop. Light wood and straight poles are most suitable to lay a-slope, and should be sharpened rather flatish at the foot, in order to their binding more firmly in the staples of the permanently fixed poles. The upper part of these sloping poles should rest between the wires provided for that purpose on the tops of the upright poles, and so laid are safely secured during the whole season, there being a combination of support throughout the whole ground, whilst the greatest possible facility is afforded at the time of picking for the removal of every diagonal pole carrying the hops, and likewise at the proper time these poles are all easily again replaced. The ground being once furnished with poles upon this principle, the axe, the line, the hop-pitcher and hop-dog may be dispensed with, and even in dry and very difficult seasons, the necessary polling can be done by a man and boy, at the rate of three acres per day, or by a woman, accustomed to outdoor work, at the rate of one acre per day. The advantage of this system is, that tying can always be commenced whenever the vines are in a fitting state to begin, as there will be no need to wait for the poles to be first set up, nor will any useful vines be damaged by the process of polling before the tyers begin their work. The stock of the hill is (by this plan of polling) at all times protected by the permanent uprights; consequently weakly, damaged, and dead hills will not be so frequently seen, as in grounds poled upon the old style, where the poles are all taken up year by year, and where the crowns of the hills are much trampled on and injured in the time of picking the hop, dang carting, &c. With my improved ladder two rows of poles can be attended to each way; this saves the necessity of moving a ladder round about every hill, as is required to be done by the old system of poling. Eight vines are trained from each hill, four to each upright pole; and when these have passed two feet above the staple on the permanent poles, two vines are taken off each standard and placed on the sloping poles. And here a very important advantage is gained, namely, the sloping poles are made, not dependent upon one hill only, but every pole has two distinct hills to furnish it with vines. The result of this is that when and where hop vine comes very unevenly, or platty, as it is commonly called—one hill having too much vine, and the next, perhaps, too little—upon the patented plan of poling the vines are all so evenly distributed that if there should be here and there a weakly or even a dead hill, every pole is utilised, and is seen to carry hops; and the vines, being all separated into twos, and running on the poles lying in a diagonal or slanting position, trained from two feet six inches to two feet eight inches asunder, prevents the possibility of the hops growing housey, or beating against each other, however severe the wind may be. Again, as the highest of the standard poles is only ten feet four inches from the surface of the ground, both sun and air descend to the lowest branches on the poles,

causing even these to be fruitful and productive. And upon this new plan of poling, if the hops are self-sheltered, they ripen more evenly, the colour is preserved, the weight is increased, and an additional gain of at least ten per cent. is produced in measurable quantity. One other advantage is that when young fruit trees are being raised, or when fruit is growing among the hops, there are no tall poles to overshadow the trees, or any possibility of poles falling to injure them. The horse-work during the summer months can be done without the slightest inconvenience, and there will be no need for digging round the hills, as the whole of the ground can be well and sufficiently worked with the horses and nudgets. Digging and dressing in the spring and all kinds of tillage can be attended to in the usual way. If the hop bine should be attacked with aphid blight, and washing be deemed advisable, upon this new system of poling it can be done more beneficially and at a great saving in cost, as all the leaves, sprigs, and branches are fairly exposed to the ready reception of the liquor applied, while the position of the poles being much nearer to the engine than upon the old style of poling, less force from the pump is required. Consequently not so much bine would be blinded by the process, as is now complained of. And here, with regard to the results of syringing hops, I will just make a passing remark. Having tried various ingredients for this purpose, I have found Fowler's Insecticide, the most effectual of any that I have ever applied—and believe this preparation to be beneficial in more than one point of view, for it not only destroys insect life, but at the same time, invigorates and strengthens the bine, and is an assistance against the ravages caused by mould in hops. If the mildew or mould should come on the plant, and sulphuring appear indispensable, one third of the material can be saved, whilst the labour will be less, and the result much more beneficial than when done upon the old style of upright poling. In picking, the bines should be cut at the staple or junction of the upright poles, and likewise at the top, one foot below the wire fork. The standing poles are then, with perfect ease, speedily detached and lowered to the ground by the bill-hook, specially invented for this purpose. The bines which are entwined round the poles between the staple and the fork on the upright can then be pushed over the top of these poles with the hook already referred to. Hops grown upon this patented plan can be gathered with much greater ease, and at less expense, as they all hang fair, both to the eye and to the hand, having no housey heads or blank tails, to hinder the pickers from freely handling the fruit. Again the stock itself is much invigorated, strengthened, and benefited by cutting the bines four feet high, and leaving the portion below around the standing poles, with the small branches and leaves to take the running sap, which otherwise too freely overflows and greatly weakens and exhausts the root. As soon as the hops are picked from the poles, the bines should quickly be stripped off, for if this is suffered to remain upon them, lying on the ground a few weeks in wet autumn weather, the poles become more injured than the whole of the year besides. Four small blocks and two cross pieces can be placed at suitable distances between the permanent standards, to serve as steadies, two of these blocks should be higher than the other two, and the butts of the sloping poles should be laid one way, to form a thatched like roof. About 400 poles can be laid in each bed, and it would be best to cover them in winter. It should now be remembered that hop-grounds once poled upon this new plan, with a moderate amount of care, will require but a very small expenditure in poles for many successive years, whilst the labour of after-poling will be a nominal consideration. When this is required, provision is made to detach the two upright poles, one row in ten, and lift them out of the ground. This is done by simply fixing a strong wire brace with eye at one end, to be stapled to one of the uprights, and turned at the other end, to drop in a staple fixed to the opposite standard. As soon as the manure is carted on, these poles, together with the wire stays, can again be replaced. Another provision is made by the introduction of an improved three-wheel dung cart drawn by traces. This will run any alley required, without the necessity of removing the poles; may be used in summer or winter, and when shelled it can be taken back to the mixen without being turned. I think the latter provision the best of the two. It may, however, be found convenient to large growers to take up one row in ten when the hops are being picked. With regard to the duration of poles, comment is scarcely ne-

cessary, as any practical man will readily perceive that the difference in cost of keeping up a ground poled upon the old system and that upon the new plan is very plain and indisputable. The 16 or 18 feet poles being reduced to the lengths of 10 or 12 feet (and these all braced together), the great strain and stress which poles necessarily have to endure upon the old principle of poling is entirely avoided; whilst the diagonal poles, which take half their bearing at the foot, in the staple, and resting midway on the top of the upright poles, the wear of these (even if each pole carries a bushel of hops) will be imperceptible for years. Again, upon this patented plan of poling only two twelve-foot poles (to each hill) have to be lifted about, and yet each hill affords more length of pole than is equal to three 16ft. upon the old system of poling, and 36 feet of productive bine may be given to each and every hill of hops. Estimated cost per acre in first poling upon the patented plan, and cost for 14 years afterwards, contrasted with the old system of poling hops. Say ten hundred plant, and where 16 feet poles would be necessary. For the new plan:

	£	s.	d.
2,000 of stout 12ft. poles (say 16ft. cut, at per 100, 24s.)	24	0	0
2,000 of medium 12ft. straight, at per 100, 18s.	18	0	0
2,000 the large size, dipped, 3s. per 100	3	0	0
4,000 wire, 11d. per 100	1	16	8
2,000 small staples	0	18	0
2,000 2½ patent rose nails	0	6	0
4,000 wires, cut to lengths	0	3	4
2,000 turned for staples	0	3	4
Cost to fix wires	1	16	0
1,000 hills to brace	0	10	0
To pole an acre at first	1	0	0
Subsequent expenses per annum per acre for 14 years:—			
Labour to keep up the poles, 15s.	10	10	0
Labour on extra poles, 1s. 6d.	1	1	0
Poling per acre, 1s. 6d.	1	1	0
Extra attention required for tying, 4s.	2	16	0
Total cost of 15 years	67	1	4
£67 1s. 4d. divided by 15 years, £4 9s. 5d. per acre per annum.			
Estimated cost per acre on the old style of poling:—			
1,000 plant, Goldings or Colegates, 3—16 feet to each hill, 24s. per 100—3,000	36	0	0
Dipping 3s. Do.	4	10	0
Poling per acre	0	16	0
Average cost yearly to keep up the poles £4, 14 years	56	0	0
Expense of sharpening, dipping, and cartage of poles, added yearly 16s., 14 years	10	16	0
14 years poling 16s.	10	16	0
Cost of 15 years	118	18	0
or £7 18s. 6d. per acre per annum.			

The figures which I have set forth are intended to represent best poles, and for the most expensive grounds. If for grape hops or Jones', of course the poles would be of a much cheaper character to begin with, but not less cost in the long run. If poles are purchased when green, quickly get them shaved and dipped without delay, as the preserving properties of the creosote, which renders the foot impervious, will follow the pores freely when newly severed from the stub, and will add to the durability of the poles throughout, helping them to last for many years without suffering decay. For the new principle of poling, the poles should be made ready and placed in the ground before the spring of the year, or the ground be dug. In the early hops we picked at the rate of 1 cwt. 3 qrs. 4 lbs. per acre extra on the patented plan, and in quality worth 10s. per cwt. more than those of the same sort grown close by on upright poles. Here we grew 20 cwt. per acre on Colegate hops, picked after the severe gales of wind. We found on the new plan of poling, an increase of four cwt. per acre extra. These were sold at £5 8s. per cwt. Those adjacent, of the same sort, grown on the upright poles, fetched £5 2s. per cwt. This ground yielded about 14 cwt. per acre.

Mr. STONHAM asked what the royalty would be?

Mr. COLEY said he had carefully considered that matter, and had decided to make it of an easy nature—£1 an acre—and this would not be attached to the land, but to the purchaser of it, so that if he at any time removed to another farm he would still be able to grow hops on the same principle. Mr. COLEY then entered into some statistics to show that arguing from his last year's growth, there would be an increased crop, both in weight and value, from the adoption of the principle. There were many, he said, who, no doubt having their poles prepared for the old principle, would not like to adopt it extensively at first, but if they tried one or two acres they would not be running much risk.

Mr. LOVETT said the system would probably interfere with valuations, as the incoming tenant might not desire to carry out the system.

Mr. COLEY said he was so convinced of the advantages himself that if it entailed the drawing of his poles every year he should follow the system.

Mr. CHITTENDEN said he suspected the poles standing would affect their durability. Then, again, with regard to strong bine it might be useful, but with the Jones' or the ordinary Grape the stout poles would not be at all applicable, as they would injure and strain the bine too much.

Mr. BARLING inquired whether Mr. Coley's estimate of the increased yield was founded on measure of weight?

Mr. WATERMAN said there was one thing which had not been mentioned by Mr. Coley which was very much in favour of the system. He visited Mr. Coley's ground after the prevalence of the very high winds of the last season, and he was astonished at the difference in the damage done between the two systems. There was ten times the damage done to the upright poles than there was to those on the new system. He had not gone into the matter thoroughly, but he felt inclined most certainly to try a few acres. He did not see quite so much difference in the cost of the poles as Mr. Coley did.

Mr. STONHAM said he would not go into the merits of the question as to the better quality of the hops; but he thought Mr. Coley had very much understated the first cost of the poles. He assumed that all larch fir poles of the best description were used, and he would not undertake to pole an acre under £100.

Mr. T. REEVES, jun., said he could not understand what there was in the system that it should withstand the wind so much better than the old system. He thought with a strong wind blowing in a certain direction that the poles must come down.

Mr. H. PALINZ inquired as to the extra expense of tying.

Mr. COLEY said he had estimated this at 4s. an acre.

Mr. COLEY replied. In his opinion if poles were thoroughly crooked, that no injury whatever would result to them by standing. He was convinced that when he had once poled his hops they would last as long as he might live. With regard to the cost, he maintained that his figures might fairly

be taken. As to the improved quality, he showed that on the old principle the hops were knocked about and bruised, but his were uninjured, and fully exposed to the light and air, so that they attained full weight. The estimate he made was from measure. A bushel grown on his principle when dried weighed 27 ounces, but upon the upright poles the weight was 24 ounces. He had placed in the hands of the Chairman letters which he had received from gentlemen—experienced hop-growers in the county—who had been eye-witnesses of the damage caused on the upright poles, while upon his system there was not a single pole out of its place. He then showed how, by a simple instrument which he had invented, the wires could be bent so as to hold the poles tightly, which could be easily removed at the time of picking. In reply to the remark of Mr. Chittenden as to the poles being too stout for certain kinds of hops, Mr. Coley showed how by placing the ends of the poles cut off at the hill the weakly vines could be enabled to climb on to the upper portion.

The CHAIRMAN said it was his pleasing duty to move a vote of thanks to Mr. Coley for the courtesy with which he had brought the merits of his invention before the club. His opinion was that the plan was a very useful one, and he cordially wished Mr. Coley success. If it were good, it would be sure to introduce itself; but if it were not, the inventor would gain very little profit by it.

Mr. BARLING then pointed out that he had asked the question as to how Mr. Coley's estimate of the growth was arrived at, as he considered estimates made by measures were always fallacious. He knew that it was generally said that a certain number of bushels produced a cwt. of hops, but no man could so measure without prejudice as to be able to say that the hops he had measured represented actually what another measurer might make of another quantity of hops. If he were asked to give an opinion on the general advantages of the upright and the diagonal principle, he should say, supposing the costs to be nearly alike, that his opinion was decidedly in favour of the diagonal principle. He saw those grown by Mr. Coley, and every hop was fully exposed to the light and air, and he imagined that from this reason there would be increased weight in given measure, and a better quality over those grown on the upright principle. He then pointed out that in his opinion there would be some wear and tear in driving in the staples, and from the carelessness of men putting up the diagonal poles. It was not safe to trust entirely to estimates in all these matters. As a general principle, he thought there would be a gain in quality, but he could not believe that any system would permanently increase the quantity of hops grown.

Mr. COLEY then expressed his acknowledgments for the vote of thanks, and, having produced his letters patent, said he based his calculations of the increased growth on the fact that with the present system there was a large quantity of blank bine, which on his plan became fruitful.

THE NON-RESERVATION OF HARES AND RABBITS.

At a special general meeting of the Warwickshire Chamber of Agriculture, held in Coventry, Mr. J. H. Burbury, the president, in the chair, Mr. MUNTZ, of Umberlade Hall opened a discussion on the "Game Laws." He said that when he issued the circular on the 9th of December last, he did not intend to enter further upon the question at present, but as several members of the Chamber expressed a wish to him that he should introduce the subject to their notice he consented to do so. He was not, however, prepared to say how far the present game laws required amending, nor was he prepared to say whether they should not be altogether repealed. Probably if game was made the property of the land for the time being, and also if there was some protection of it for a particular season, many difficulties might be removed. But his object in writing the circular he had spoken of, and what he had to say was with regard to the position which landlord and tenant would hold supposing the Game Laws were altogether abolished. He wanted to inquire that day, and probably some gentleman present would be able to answer the question, which was, supposing the Game Laws no longer

existed, how would the case be if the landlord chose to keep game on his estate? He did not know that he need allude to the various grievances which the tenant farmers had to submit to, and perhaps they could not too often speak of the injustice when they did so earnestly, thoughtfully, and with a determination to remedy, if possible, those grievances. He would suppose for a tenant taking a farm. He would make his calculations, looking at the quantity of game then existing on the farm, with a view of seeing how much rent he could pay, and get a livelihood out of it. Afterwards, however, he sees his farm overrun with game, and his crops, which he expected to realize, and the profit of the same which he expected to put in his pocket disappeared. But there were still greater grievances than the one he had mentioned. Some of the farmers had been in possession of their farms for years, and perhaps in their families for generations. In towns people changed from house to house, and they thought no more of the house than child. But, in the country, and agricultural districts, it was very different. Every Englishman had his home, and that feeling was not stronger per-

happens than in the mind of the English farmer. In every farm which had been held by the same farmer for a number of years were all the associations of early youth. Why should they forget that the farm, and the farm-house, was the farmer's house, and that he had an attachment to it? Suppose a farmer had lived from his youth to maturer years on the same farm, and had been a good tenant, a good neighbour, and an industrious man, and obliged to leave it in consequence of the overrun of game, it would be a great hardship to him. A farmer generally took his farm for a long lease—21 years—and with a fair quantity of game upon it. He made his calculations so as to get his livelihood and maintain his family respectably out of it. In three years, or perhaps in a less period, the farm might fall into other hands by succession or by sale, and the tenant have a new landlord. The quantity of game may be increased, and a probable loss stare the farmer in the face. Every workman must have his tools to work with, for without them he would be a helpless individual. Every man must have the means by which he could earn his livelihood. How, therefore, could a farmer earn his livelihood without his farm? If a man forgoes all his loss and left his farm, what was he to do, if he could not get possession of a farm at any time? He might rent a large farm and be obliged to leave it because he had sustained so great a loss by game. He did not wish them to suppose that any landlord would willingly allow such an injustice, but he thought this evil arose in consequence of the landlord not being sensible or aware of the damage and injury done to the tenant by the game. What he wanted was this: some means adopted by which a true state of things could be put before the world. He wanted the amount fixed when every tenant when he took a farm should agree to provide either capital or damage for the landlord's sport or pleasure. When there was an increase of damage by game, it should be decided by an impartial judge, and the landlord should pay to the tenant any increased amount above the original bargain. Landlords always made provisions for their own protection, and provided that the tenants should not remove either hay or straw from their farms; and also every other protection they could frame for themselves they put to the agreements. But there was no protection against the landlord walking off with the property of the tenant. An objection was raised against this. How could the tenant interfere? If he opened his mouth about it he was probably turned out of his farm. [A VOICE: "It ought not to be so"]. He would make the matter compulsory, so that the landlord nor tenant should open their mouths. He would make it compulsory by law that whenever a landlord chose to preserve game he should be bound to appoint a valuer, who should make a valuation annually of the amount of damage done. The tenant, as well as the landlord should also appoint a valuer, and the valuation should be laid before both parties, who would then see the true state of things. He was also in favour of making the valuation public, so that everyone might see the amount of damage done by game. One objection might be made in the difficulty of valuing it, and it might be said that no one could make it. He would remind them that if they could not value it, professional men who had had great experience in valuing could be obtained, and who would make it their business to ascertain, as near as possible the true value of the damage done. They must be professional and independent men, who devoted themselves to their business. The next thing was respecting the time when the valuations should be made. He thought that in July or August was the proper time, but he would leave the time of the valuation to the valuer. The crops should be valued at the time when the greatest amount of damage was done.

Mr. MANN, a tenant farmer, was strongly against the continuance of any game-laws at all, and commented on the crime and immorality which they occasioned. He thought the rate-payers should be no longer burdened with the cost of preserving game for sport, and that hares and rabbits should be treated as vermin.

Mr. RICHARDS, another tenant-farmer, was also against the game-laws.

Mr. P. W. MARTIN, M.P. for Rochester, pointed out that as the law at present stood the game belonged to the tenant. The only way in which game could come into the possession of the landlord was by the tenant giving up his right, which he surrendered to the landlord under certain conditions. He quite agreed with the last speaker that the time had come

when rabbits should be dealt with differently from any other animals. However *bona fide* the landlord might act, there was always a soreness about these unfortunate animals, and he spoke from his own knowledge when he said that it was possible practically to give a tenant back the whole of his rent, and yet not satisfy him. Rabbits were a nuisance to the landlord in his turn, and they were the great attraction to poachers. He thought if the landlords of the country would make up their minds to deal in a generous spirit by their tenants, and to pass a measure that concerned this one thing, they would hear little more complaint about the game laws. The proposal that he had to make was this—that a short act should be passed, absolutely vesting the right to rabbits in the tenant, and prohibiting them from being made matter of agreement. With regard to partridges, he believed, from the quantity of insects they destroyed, that they did hardly any harm, but an immense amount of good. As to pheasants, they did not, as a rule, prey on the produce of the farmer, but lived on Indian corn and such things as were provided for them.

Mr. FOSTER, tenant farmer, thought the game laws ought to be entirely abolished. He did not stand there to advocate the abolition of sport, but he did stand there to advocate that sport be put upon a different footing. He looked at this question as a national question and as affecting the whole country in its supply of food. Some years ago Providence visited them with a cattle plague, and Sunday after Sunday they sent up petitions that the plague might be stayed. They deplored the loss of animal food which that cattle plague occasioned, but while doing so they forgot they were suffering annually another loss of food from causes entirely within their own control. He believed the loss of food to the nation in one year by the over preservation of game was greater than the loss in any one year by the cattle plague. The game laws he considered a remnant of the feudal system, and he said, "Let us make a clean sweep of them." He thought if landlords treated their tenants fairly, and left the preservation of game entirely in the hands of their tenants, they would require no gamekeepers, and would never want a good day's sport. Gamekeepers he considered a very great nuisance to the farmers; they were generally taken from an uneducated class of men, and made themselves offensive in many ways. They were, to a certain extent, set to watch poachers, but they rather watched the farmer and they generally made more mischief between a landlord and his tenants than it was possible for him to describe. He said, therefore, do away with game laws; do away with keepers, and there was not a tenant in the country that would not take a pride in providing a reasonable amount of sport for his landlord and in carrying a gun with him. He condemned the battue system, and saw with regret the encouragement which had been given to it by the Prince of Wales.

Mr. S. B. CONGREVE, tenant-farmer, thought hares and rabbits should be struck out of the game-list. He did not think partridges did much harm, although pheasants did. But what they wanted most was, to get rid of the nuisance of preserving large quantities of hares and rabbits. As to Mr. Muntz's proposal, he thought it impracticable. Mr. Muntz spoke about getting an impartial man; but where would they find him? He spoke about a professional impartial man, but what would a professional man know about it? Those professional men who did not lean to the landlords' side would get devilish little employment.

The CHAIRMAN here intimated that a telegram had just been received from Mr. Newdegate, M.P., senior member for North Warwickshire. It was as follows: "I much regret that I am prevented attending the meeting of to-day. I hope you will say this for me. I have read Mr. Muntz's letter. The annual valuation, if enforced by law, would be an arbitrary measure, and lead to great inconvenience both to tenant and landlord. It would be simpler to declare that the game belongs to the tenant, all agreements to the contrary notwithstanding. This would be unjust without power to alter the rent. The remedy for any evil which exists seems to be in specific contract between landlord and tenant, without the intervention of third parties, except by agreement between landlord and tenant."

Mr. BROMLEY DAVENPORT, M.P., was unfavourable to Mr. Muntz's proposal, which he thought would prove difficult in working. He understood from this meeting that there was no objection to landlords coming down to shoot. The ob-

jection was the excess in preservation of game, which, like all other excesses, was bad. He thought, if some provision could be made whereby rabbits could be more decidedly left to the tenant than they were, or, if you will, all ground game, that it would conduce to a more satisfactory state of things. Practically, he might say that on his estates every tenant of his had leave to kill rabbits; and therefore, in regard to them, he never had any complaint except from one or two small tenants who lived near the wood, and whom he had always endeavoured to compensate. As a landlord he was in favour of preserving game in moderation, but not in excess, which he regarded as intense folly. Referring to battues, he said he had seen in the papers the most absurd and exaggerated statements regarding that mode of sport; as, for instance, that the excess of game was buried. They had seen that statement made in the papers, but had anyone seen it in practice? Equally absurd statements had also been made by men who did not know anything about game or game-preserving, or the

relations between landlord and tenant. He had seen a London leading article in which the writer, commenting on the hardship of farmers being obliged to preserve game, said, "What, for instance, could be more unjust than that tenants should be compelled not only to keep the rabbits for their landlords, but even be obliged to preserve their eggs?" His feeling was that something should be done by the Legislature which should have the effect of diminishing the quantity of ground game; but if a tenant had no objection to an arrangement with his landlord whereby the landlord could have a reasonable amount of sport, then they had no right to use compulsory legislation. "That rabbits and hares should be the absolute property of the occupier of the land, and that any agreement to the contrary between landlord and tenant should be null and void."

The following resolution was unanimously adopted, as it appeared at the time; although as a county member Mr. Bromley Davenport has of course since expressed his dissent.

DORCHESTER FARMERS' CLUB.

STEAM CULTIVATION.

The members of this Club, who tried the experiment of holding meetings with closed doors, have returned to their former practice of inviting reporters to record their deliberations.

At the last meeting, Mr. RICHARDSON, the representative of Fowler and Co., of Leeds, said: The subject of steam cultivation, which he understood had not previously been ventilated in the county, demanded their serious attention. Practical experience as a member of the firm which had been instrumental in introducing steam cultivation in other counties had led him to conclude that sooner or later it must be adopted in every county of the country. When he told them that the great pioneer of steam cultivation was the Viceroy of Egypt, who had ordered £70,000 worth of machinery of Messrs. Fowler and Co., he thought they would rest satisfied that if the farmers of England did not progress in that matter foreigners would tread on their heels. The gentleman who had managed the machinery supplied to the Viceroy of Egypt was a young German, who learnt farming. At the time of the cattle plague the Viceroy was driven to his own resources. During the year of the great international exhibition he had seen the steam plough of England at work. When his cattle were dying by hundreds and thousands, and when cotton was at a fabulous price he sent a telegram to Messrs. Fowler and Co., asking them in what time they could supply him with 20 double steam ploughs. The answer was "four months, provided that £20,000 is lodged at a London bank." Within four days the money was lodged, and the Viceroy had since been supplied with 75 double steam plough engines. Mr. Richardson afterwards proceeded: It is not my intention to treat of the mechanical part of this subject, for I am aware that many and various opinions are held respecting the different adaptations of machinery necessary to encounter the greatly-varying nature of the soils. But all descriptions have been brought to a high degree of perfection, and, therefore, the farmer has little difficulty in selecting the one which is more particularly suited to his own immediate requirements. Moreover, the system of hiring out machinery in the shape of two powerful traction engines has made steam subservient to the wants of all classes of agriculturists, and with proper management this system can and will economise the working expenses of the farmer materially. Labour, whether animal or manual, is a very serious item of expense to the farmer, for the former has been confined to the grain-consuming horse, while the latter is daily demanding higher wages, which tends to lessen the farmer's profits. But a brighter mora is now dawning upon his prospects. After years of expensive and laborious experiments, that all-powerful, untiring agent, the steam-engine—the great abridger of time and labour—is now ready to prove to the farmer as tractable and serviceable in the field, when attached to the plough or cultivator, as it has hitherto been while setting in motion the various machinery of the farm-yard. The year 1869 has not

been a year of great productiveness or prosperity to the agricultural interest and to the county. But judgment and industry combined will, with the assistance of mechanical skill, insure to the husbandman more safety and stability, freedom from preying anxieties, and greater ability, with a proportionate capability to supply the increasing wants of an increasing population. It is very gratifying to note the great interest everywhere manifesting itself in favour of steam cultivation, and to discern the gradual crystallising into form of the crude views at first entertained as well as the partial dissolution of those prejudices which at one time apparently threatened to oppose such an improvement in the field of labour; and it must tend to confirm our belief that a grand and sublime development of practical and industrial ideas, however slowly accomplished amid embarrassments and discouragements, will at length be acknowledged one of the crowning glories of this noble kingdom. It is a fact, too, that cannot escape the attention of the observing class, that men of superior education and wealth are now taking an interest in farming, giving to the world the benefit of scientific experience and research, and pursuing their vocation with a view to render the labourer a more mechanical agent, and thus obtain from him his mental in lieu of his animal power. We must all admit that England has surpassed all other nations in the excellence and variety of its agricultural machinery. Now all improvements in agricultural machinery have a tendency to reduce to the lowest minimum the proportion of animal and manual power employed in its operations. I will now propose to consider four points connected with this subject—First, the advantages to be derived from employing steam power in the cultivation of the land; secondly, the economy which will be effected in all the tillage operations on the farm; thirdly, that the work can be done at precisely the proper time; and fourthly, and the most important of all, and one that constitutes the gist and pith of the whole subject, that the produce of the land can be materially increased and the cost of production decreased. First, then, I will consider the advantage to be derived by employing steam power in cultivating the soil. As an instance, the steam thrashing machine, at one time the fail—worked, of course, by manual labour—was at length superseded by the horse thrashing-machine, or animal power; whereas it has now succumbed to the mechanical power of steam. The further this saving of both animal and manual labour progresses, the greater will be the profits of the farmer, and the more extensive become the garneries of the world. Coincident with this application of mechanics to agriculture, systematic and enlarged business aptitudes will seek alliance with this noble art. Farms of hundreds of acres will be managed with more skill, and a larger margin of net profit than even farms of smaller extent, for the larger the farm (so long as it is within the means and capacity of the manager) so much the better and cheaper will it be cultivated. In view, then, of all these evidences of the progress and of the expanding capabilities of agriculture, I

have pleasure in introducing to your favourable consideration the steam-plough or cultivator, believing you will give it a trial, after hearing the great advantages it possesses over all animal and manual power, and encourage it with that spirit of liberality which becomes a great and important county. And when we consider that but a few years have elapsed since steam cultivation was only an idea, and that the inventors had no previous models or similar appliances to work from, but had first to discover the principles and then apply them in all their details to the invention of proper machinery, the present developed condition of the steam plough or cultivator is truly wonderful. We must all admit that our gardens produce much more (whatever the course of cropping) than the same area of land does in any part of the farm; and a satisfactory reason can be assigned for it. It is in consequence of deep trenching, a thorough loosening and mixing of the soil, and the non-compression of it by treading with horses' feet after the process of digging or forking it over. Such, then, is the case with the steam cultivator. All the roots and plants are allowed to penetrate through a soil thoroughly disintegrated or broken up, being in no way intercepted by a hard subsoil or indented path, upon which horses have trodden for years; consequently a complete change is effected in the nature of the subsoil, and more particularly as regards its drainage, and this on strong soils is a most important feature, for the drainage of all strong tenacious lands is the first step towards improving it. But the practical solution of the great advantage of steam cultivation on all strong soils is that all treading is avoided. Moreover, there is an old inspired credence, that "the clouds drop fatness." Therefore I consider water must be the great fertilizing process, if by proper cultivation it can percolate freely. But can such be the case if the subsoil is not broken up; or if the land is consolidated or compressed by the action of the plough irons, the squeezing of the mouldboard, the landside, and sole of the horse plough, together with the horses' feet? For the sake of explanation I will take a team of three or four horses, ploughing a 10-inch furrow. They will leave more than 300,000 footprints on the acre, and, since these nearly cover the ground, the effect will be a hard subsoil or pan beneath the cultivated ground is left, which becomes worse with every successive ploughing at the same depth. Now the tractive power which horses are able to exercise upon a plough is very limited, and is further decreased in consequence of their having to convey their own weight over the land, as well as partly to undo the compression caused by their own feet. I will just practically illustrate this, since it is of such importance. Suppose a horse is taken when the land is wet, or in a waxy state, and walked across the track of a steam plough, and made to travel to and fro transversely on every ten-inch width until a breadth of six yards is trodden over, it is ascertained that if the steam-cultivating engine has just sufficient steam to perform its work properly before it arrives at the ground so trodden down, it will be completely stopped before it gets through the six yards; and, considering the momentum of the fly-wheel, this experiment clearly shows, and plainly and practically convinces us, that the power required is something very important; and experience further shows that one-third additional draught is required on land so trodden down and consolidated. Now, there is no treading or poaching the land by the steam cultivator. The engines stand on the headland, and draw the implement to and fro by means of a wire rope. It is driven at a much more rapid speed: it throws up the soil in a loose state, and thereby enables it to derive considerably more benefit from the influences of the atmosphere acting upon it. The rapid motion of the steam-driven implement tends also to loosen and aerate the soil much below the actual depth at which the tyre or share is working. But in horse or ox ploughing the case is just the reverse, for the soil of the plough and the treading of the animals so consolidate the subsoil that the necessary chemical action between the soil and subsoil, and consequently all escape of water and gas, is entirely prevented. The result of tearing up and loosening the subsoil is that a much greater quantity of ground is penetrated by air, and its temperature is thereby raised. The air is replaced in the same proportion by water (when rain falls), and this moisture is retained in the steam-cultivated ground as if in a sponge, any superfluous quantity sinking away to the drains beneath, instead of the whole lying for a long time in a hard and trampled subsoil as though held in a dish, making

the land cold and ungenial. As regards the temperature of the soil, I am satisfied, from practical observation, that this subject in connection with agriculture demands our investigation and consideration, for the improvement of the temperature of the soil is directly accomplished by the improvement of its drainage, as aeration and its power of absorption and evaporation. A high temperature of the soil materially assists the growth of plants, and that temperature cannot be kept uniform except by deep cultivation and an equal looseness of the bottom soil. I have frequently seen fields of wheat in the spring time turn completely yellow in three or four days, arising, in my opinion, from shallow cultivation, the water not getting beyond the horse-beaten surface of the subsoil, thus producing a low and injurious temperature; but the case is altogether altered if you cultivate very deep and break up this board or pan, and so allow the water to get away into the drains. With such a quantity of loosened soil as I recommend, say two feet, on all strong soils, it must be obvious to everyone that, so long as the excess of water can pass readily away, it will not cool the land, but will, on the contrary, rather tend to heat it, and leave in the soil its ammoniacal properties. The temperature of the air is of less importance than the temperature of the soil, as regards the healthy state of the plants, for an early development is of vital importance to all root crops, for if you once get the root to take good hold of the soil the probability is that the crop will continue healthy and luxuriant; but how can land be kept in an even temperature when horses have trodden and left with every foot-print a sort of basin for the water to stand in? These remarks, of course, only refer to strong, heavy, and tenacious soils; but a similar result is observable on light lands, but of course they are not so damaged by wet or excessive moisture. Their greatest danger is from "burning" in dry weather; but deep cultivation and loosening of the soil causes them to retain their moisture in a dry season for a much longer period than if the subsoil might be what is termed a board, then the roots of the plants have more liberty to penetrate the soil until stopped by natural causes. They can follow the moisture in the ground much further than would be possible after horse cultivation, for, since no burning takes place until the deepest roots have entirely exhausted the moisture around them, the crop is made capable of resisting the action of heat and the effects of drought for a very long time. I am practically convinced that the success or otherwise of a root crop depends upon the number of cubic feet of soil that the roots are able to penetrate; and I am satisfied that a grain crop on light lands will stand up much better and is not so easily laid on a deeply cultivated soil as one which is shallow. But a further and additional advantage is obtained on light soils in the greater facility offered in eradicating couch grasses. The horse implement, from want of power to go sufficiently deep, cuts the couch into small pieces, very frequently leaving the roots in the ground, which must afterwards undoubtedly rise up in judgment against the occupier, and, being brought to the surface in small pieces only, the horses' feet while harrowing transplant a considerable portion of it, which of course necessitates more draggings and numerous other operations. But this brings me to the second part of my subject, viz., that by steam the tillage operations on the farm can be effected more economically. At present I must admit that the cost of performing tillage operations by steam is far from being so cheap as it should be or what it eventually will be. In many cases, and especially in regard to steam machinery worked for hire, the very worst and heaviest portion of the work is given to it, and very frequently that which cannot be done by horses. Now, before we obtain the maximum of cheapness, we must allow steam power to perform all the operations connected with the tillage of the ground, for if after steam cultivating a field horses are taken upon it, for the purpose of harrowing it or doing similar work, the ground is of course trodden down again and consolidated. The consequence is, the next year it requires much more power to break it up than would otherwise be the case, and not only does it require this extra force, but clod-crushers and other implements have to be applied to it, which should not be the case if it had been worked immediately after harvest time, or when the land was thoroughly dry. The generality of land, if worked by steam power and kept entirely free from the trampling of horses, would only require one very deep cultivation every fourth or fifth year; and would be kept in such a

state as to allow the air and moisture, together with the roots of the crops, to penetrate freely, so that the cultivation of the corn crops in their proper rotation would only require a light or surface operation sufficient to cover the seed. We may not be able to calculate the precise amount of increase in proportion to an additional inch obtained in depth; but experiments have proved that in many cases it bears relatively a near proportion to the increase in depth of culture, so that, when the soil is only worked to six inches, an inch greater depth of cultivation would give nearly one-sixth more production. An erroneous impression exists relative to the depth to which the roots of the cereals and clovers, as well as many other plants, will descend in a well cultivated and fruitful soil. In pits filled with surface soil, or wherever the mould is of suitable texture and condition, carrots and parsnips are often found of a length of three feet or more, clover roots from three to four feet, and instances have been known of still greater length of the roots of wheat and oats. But with the prevalent mode of horse culture, in very compact soils, wheat roots are so near the surface as to be thrown out by the mechanical displacement of freezing and thawing, and, if not utterly destroyed, they struggle fruitlessly to pierce the unbroken subsoil, packed, perhaps, by the tread of horses for a century or more, and finally yield to the blasting power of an early drought, and become blighted, light, shrivelled, worthless for seed, and of no value for bread. Now deep culture with proper drainage will procure exemption from most of these liabilities, and more especially on light soils, from all danger of loss from drought. Deep cultivation then and thorough pulverisation is a prime necessity for all root culture, and in no way can deep cultivation be so cheaply and more economically performed than by steam power. This, then, brings me to the third part of my subject, and I will endeavour to show that the work of the farm can be done at precisely the proper time. I must admit that the cultivation of the soil is a business which requires a great amount of care and attention, combined with practical experience. A very false idea of a farmer's business is conveyed when it is said that any one is fit for farming. On the contrary, I do not know of any business which requires such minute attention and such keen observation, and this arises principally from the extraordinary variations in the climate, weather, and the soil, and the great and important effect these variations have upon the crops. These farmers who most carefully observe the state of their land, and never work it except at proper times, will, of course, derive the greatest advantage from it. On a farm under horse cultivation, however, this is a very difficult task, as the small amount of profit yielded by farming will not allow the number of horses, implements, &c., to be kept which would be necessary to deal with all the land at the proper period and in the most economical manner. This inability, then, to deal with the land when dry and in the best condition, involves its deterioration until it can scarcely be considered to be in growing condition, and not unfrequently the total or partial loss of the crop is thus caused. When we consider that there are only two or three months in the year during which the tillage operations can be profitably performed, the fact that the horses are sometimes kept working continually in order that they may not fall behindhand with their work shows clearly that the land must often be operated upon when it is in a very unfit and improper condition. But the person who farms by steam has a powerful and ample force at his disposal, so that he can afford to wait until his land is in a fit state for working, and this force being an untiring one he can work night and day if necessary to complete those operations for which the season will not tarry. It is often customary to hear farmers complain that they have got behind hand with their work, and they will point out a field, or perhaps two, in which the crop has been nearly lost, simply because it was put into two or three days later, or when the land was really unfit for the reception of the seed. Now this occurs because the farmer is usually obliged to keep his working force of horses down to the narrowest possible limit, and the consequence is that in some unfavourable seasons he requires twice the number at his disposal to complete his work in proper time. But what I have shown and I trust convinced all practical men is that these irritating and expensive difficulties are almost unknown to the man who farms by steam. Such being the case, I will proceed to point out lastly that the produce of the land can be considerably increased and the cost of produc-

tion decreased. This is the most important part of my lecture. To accomplish this, however, science and practice must go hand-in-hand, for Liebig, the greatest chemist that ever lived, has stated that deep pulverisation of the soil was attended with most important results, for he had discovered that when the surface of bodies was exceedingly extended by a minute comminution of their particles they could condense 80 times their substance in gasses, as, for instance, a piece of beechwood when powdered and reduced to a state of charcoal. The effect of this, then, in a finely pulverized soil would be to absorb and intensify the action of the atmosphere upon that soil, and thus absorb 80 times the amount of air. Thus, then, science confirms the daily and practical experience of agriculture. It explains the whole system of fallows, the whole system of the rotation of crops, for in this way the whole action of the atmosphere upon the soil was so deeply intensified that the soils which were made fallow entirely altered their chemical character, and, farther, the rotation of cropping was only a different kind of fallow, for a crop was put in which did not exhaust the soil instead of one which had exhausted it; and in this way, by the action of the air (which after all is the great pabulum of plants) upon the soil, those mineral constituents which had become deficient were obtained. By these remarks I only wish to justify the importance of science as closely connected with agriculture, for all scientific and mechanical inventions which assist in the pulverisation of the soil will confirm and strengthen the importance of employing steam as an agent to carry out the operations with advantage. But, as I said previously, science and practice must work together, and all the inventions of the mechanic must directly or indirectly pass through the practical and observing mind of the agriculturist; for by their skill, frugal industry, enterprise, and capital, land once barren and unproductive have been made to unfold the most luxuriant crops of grain and turnips. Take, for instance, the improvements made by the tenant farmers in Norfolk. That county is a triumph of English excellence in agricultural pursuits. There, where at one time two rabbits fought for a blade of grass, you can now see a wide waving corn field, and I feel convinced that if the farmers of Dorsetshire or any other county will make up their minds to employ the steam cultivator, if only as an auxiliary on their farms the result in improved crops will fully justify the expense. In support of this statement, then, I will read you an extract from a letter written by Mr. Bailey Denton to the *Times*. I can also show you that in the application of artificial manures to the land a very economical feature suggests itself, for I have known an application of only one sack of bones to the acre after steam cultivation for a turnip crop produce a larger crop of roots than from an application of two sacks after horse culture, and the trial was made in the same field. I account for this in consequence of the one sack of bones becoming immediately available to the plant, in consequence of the soil being thoroughly pulverised by the action of the steam cultivator, and, the bones becoming more mixed with the fine soil, they formed a continuous supply of increasing nourishment to the plants. Now, I have asserted that not only can the produce be increased, but that the cost of production can be decreased. I find from careful observation and practical experience that, including interest on the outlay, depreciation, and repairs, the average yearly cost of maintaining a set of steam tackle working 2,000 acres per year, say six or eight inches deep, will be £300 or 3s. per acre. Now, how many horses would be required to work 2,000 acres? Allowing a pair of horses can plough one acre per day, it would require a team of 20 horses to average 10 acres per day, or 60 acres per week, 240 acres per month; and they would be employed between eight and nine months before they had completed the 2,000 acres. Now, the wear and tear of the harness, implements, and the amount of farrier's and other bills in connection with these 20 horses, with interest and depreciation, will be at least twice as great as the corresponding items, which are chargeable against the steam-ploughing tackle. The average price of coals per horse-power per day—i.e., the cost of the quantity of coals we should burn in an engine to get out of it work equal to one horse or half-an-acre per day—would be 7d. Can you, as practical men, convince yourselves you can maintain a horse a day for that sum? For an engine only requires food when working, whereas horses eat night and day, and, moreover, require many hours for rest; but, with a

relay of hands, you can work an engine night as well as day. But I will put it more plainly still. If, under the present system of working with horses, a farmer could take each field consecutively, and attempt to calculate beforehand the cost of the different operations required for cultivating it under ordinary circumstances, he would probably find that such an estimate would have to be doubled before it would cover his actual expenditure, and this in consequence of wet days and other contingencies compelling him to keep his men and horses idle. Now, such a state of things in any ordinary mercantile business would be ruinous, and this is the great drawback in all calculations connected with farming where horses are the motive power. Surely, then, the cost of production can be proved to be decreased by employing steam-power, because the actual cost of cultivating the land is known and agreed upon before the engine enters the field. Such being the case, and until there is a supply of steam-cultivating machinery to meet the increasing demand of the farmers, they must rely upon horses, and are at any moment liable to be compelled to pay advanced wages to their labourers; consequently, I fearlessly assert that the farmer has greater difficulties to contend with than any other producing class. The powers of machinery are controlled, mastered, and subdued by art; but the powers of nature in her wild state are encountered by the farmer in the mildew on his corn, the murrain amongst his stock, the seasons too wet or too dry—all these combined tend to try the indomitable pluck of the English agriculturist. Consequently, how important that they should meet together to communicate their ideas and obtain information in a manner not only agreeable and useful to themselves, but also advantageous to the general welfare of the community at large. I wish, then, every success to your club, for by it you are diffusing sound, practical, and useful information; you are, in fact, promoting the progress of agricultural improvements; you are not merely developing the national resources, you are not merely lightening the national burdens, you are not merely adding to the strength and power of England, or increasing the wealth of those who are already wealthy, but you are indirectly engaged in one of the highest and noblest tasks which human enterprise can propose to itself, and, by employing machinery, you are relieving the sufferings and elevating the condition of the labouring classes of the country. And I must dwell particularly upon this, because I confess it gives the whole subject of steam cultivation an interest which otherwise it would never possess, for the higher the farming becomes, and the more machinery you employ, the less need will there be for mere brute labour, and the more you will require skilful and cultivated intelligence, for you will exercise the mental in lieu of the animal power of your labourers, or, in other words you will have less demand upon their muscular strength and a greater demand upon their brains. "Necessity," we all know, "is the mother of invention," and she is not giving birth one moment too soon to a system most essential, highly necessary, and conducive in a great measure to the happiness, comfort, and prosperity of all who are or who will be engaged in agricultural pursuits, for experience, the best of all school-masters, is everywhere establishing a common credence in the great necessity for employing mechanical inventions. But they must be brought before the bar of practical experience and then stand or fall upon their own merits. A practical and sensible man only can succeed or make money by farming for (in the face of the numerous difficulties I have enumerated with regard to the seasons, &c.) a farmer must have the intelligence of a mechanic, the business habits of a merchant, the mathematical talent of an accountant, and the shrewdness and perceptive genius of a banker. Yes, he must have all these individuals' talents concentrated within his own breast; he must be a mechanic to understand the construction of the implements brought before him; an accountant to enable him to keep an accurate account and record of his outgoings and incomings—his experiments, profit and loss, &c.; a merchant to know how and when to buy and sell cattle or dispose of the products of his labour to the best advantage; and a banker to discover when drainage and fertilisation will prove a better investment for surplus profits than funds or railroad stock. On this account, therefore, I say the dolt of the family must not be selected for the business of farming. For, as the population of the earth increases, the necessity for a more careful and improved tillage becomes apparent, and its importance in this country at least cannot be over-estimated. No

limit can be assigned to the increase of population, unless it be from the want of means to sustain animal life; and hence it follows that, with an increase of human life, there must be a corresponding increase of the means to support that life. The application of steam power to the propulsion of machinery for the purpose of travelling and transportation has proved a success beyond the most sanguine expectations of its warmest advocates. No animal power can possibly compete with it. It is as untiring as the sun in his course; and when its day's work is done, it needs no rest, but is ready at a moment's notice to renew its task. Can we doubt, then, for a moment, that it is destined to supersede animal power in agricultural operations? Briefly, then, to sum up the advantages derived from the steam plough, I have endeavoured to show that it will cultivate more deeply, cheaply, and rapidly, leaving a mellow and warmer soil. Its rapidity of execution enables the farmer to cultivate a larger area at exactly the time to secure the best possible results. It excites greater activity and promptitude amongst the labourers, and leads to habits of system and order in all their operations. It substitutes artificial or machine power (always attainable to any extent) for animal power and manual labour, which are often unattainable to the extent required. It secures uniform seeding and ripening of the crops, for the same engine can at the time of ploughing also sow and harrow the ground by having sufficient power to draw all the implements at once. And in this mode of cultivation, novel to perhaps many of you, we shall have pleasure united with profit, ease with enhancement, dormant earth below made to revive the exhausted soil above, and all improved; and in all this process the mind as well as the purse is filled and benefited; for deep cultivation, by which a warm, dry, mellow, and improved soil is produced, is the true acme, the real charm and test, of good farming, and is not second even to a wise adaptation of good seed to soils. Unless, then, the farmer keeps pace with the spirit of the age, uniting art with science and science with mechanical skill, he will find himself in an inferior grade, where he will enjoy less of the blessings, the treasures, and refinements of life, and endure more hard work than any other classes: for the experience of all enlightened communities proves that the necessities of life, as well as its luxuries are cheapened and improved in the same proportion as the ingenuity of the mind guides the power of the muscles, and the mechanical powers supersede the animal forces. Then the nation at large will derive benefit from the increased yield of crops, as well as from the fact that the materials to feed the power used in tillage operations will be drawn from the coal mine or the forest, instead of being taken from the produce of the fields. We shall not be obliged to import so much corn as hitherto, and a larger percentage of the crops will be converted into food for human beings instead of food for horses. Then will farmers prove "benefactors to their country" in every sense, for they will not only increase the yield, cheapen the cost, and lighten the labour of obtaining the necessities of life, but they will give convincing proof that they appreciate the labours of those who have spent their time, money and energies in this glorious attempt to uphold the character of British agriculture, to maintain her position as a nation on the face of the globe, and will acknowledge steam cultivation not only a fact but a glorious triumph of human genius over mere soulless matter, and one which, if encouraged, will more fully develop the character of Englishmen than any invention yet introduced—will also materially assist in alleviating the wants of our poorer brethren—have a tendency to increase our wealth as a nation, as well as add strength, glory, and honour to our British Constitution by elevating the condition of all classes in society.

Mr. J. G. HOMER, the Chairman, was one of those old farmers who had used but little and therefore knew but little of steam power. Some practical men would perhaps like to offer a few observations. There was Mr. Barnes, for instance; no man had had greater experience than him in steam cultivation.

Mr. BARNES had certainly had long experience. He should like to hear Mr. Richardson show how he had managed steam cultivation at 8s. per acre. His own experience of five or six years did not enable him to see how it could be done at that price.

The CHAIRMAN: Give us your opinion as to the merits of steam cultivation.

Mr. BARNES : I decidedly recommend it. I should not like to manage a farm without it. I mean a farm of extent—say over 400 acres. Steam power we shall see more used than ever. I should not like to be without it.

Mr. H. TAYLOR said his own experience in steam cultivation extended over six or seven years. A few friends had hired his tackle for steam cultivation, but he had never been able to do the work at 3s. per acre, nor had he known it done at that figure. He should be very pleased to do so, but he had never used any of the double tackle on Fowler's new principle. Perhaps with that tackle he should be able to carry on steam cultivation at 3s. per acre with a profit; he should be very pleased indeed if he could do it. He thought that at present few men letting out steam tackle for hire could accommodate many customers, at least as many as there were likely to be in Dorsetshire. Certainly those who hired out tackle would not be able to manage with one set or yet with half-a-dozen sets, and it was not likely that they would pay, considering the limited time they would be required—say three months. It must be remembered that the tackle was very expensive. He had a set which cost him a considerable sum, but he was happy to say that he had put something into his pocket—the tackle had worked very satisfactorily. He thought that if he were a farmer and had 400 acres of arable land he should have a steam cultivator. The way to make steam cultivation pay was to work say half-a-dozen farms after harvest consecutively, doing perhaps 50 acres per day. The job, however, was to do that amount of work; he had found ten acres enough. But, as he had just said, he had not yet used Fowler's double tackle. The other day he saw two or three sets of tackle sold, and on the farm one of them stood still while the other was at work—which was not a very prosperous game. Mr. Richardson might possibly be acquainted with the soil of Dorset; perhaps he would kindly state what he thought would suit the Dorset country best. He felt convinced that Fowler's ordinary cultivator would not suit this country. Mr. Taylor spoke highly of Smith's implement—constructed on the "turn-round" system. No implement for steam cultivation which had come under his own notice was like Smith's "turn-round"—he had worked Smith's tackle for six or seven years.

Mr. JOHN GALPIN was one of the first in this neighbourhood to introduce the steam-plough for hire, and he found the difficulty which Mr. Taylor had expressed. He could not please everybody, and was glad to be relieved of the chance of offending everybody. It perhaps might be worth the experiment to keep a steam-plough between two or three farmers. As to which implement was best adapted to do the work, he would leave that to those who were more experienced than himself. He had used Fowler's which gave very great satisfaction as far as it went; it had the power of turning up the land a greater depth than any customer wished to have it. As to the merits of Smith's implement he believed it might be worked most economically. He agreed with Mr. Richardson regarding the steam-plough that you must not judge of the value of it by one experiment. Mr. Richardson had very ably laid before them the advantages of steam cultivation, and there were many gentlemen present whose practical knowledge on the subject enabled them to speak thereon. As regarded Mr. Richardson's estimate of 3s. per acre, he (Mr. Galpin) found that he was obliged to charge more than 3s. or 3s. per acre, and then with little profit to the person hiring. He hoped that Mr. Richardson would explain his estimate, because that was a very essential point. Of course, all would be in favour of steam cultivation, provided it was the most economical, and on this point it was important that they should have before them the actual and not merely isolated facts. He hoped they would have a full explanation from Mr. Richardson on this important point. As to the value of the steam-plough there could be little doubt.

Mr. DUKE, in response to a general invitation to say a few words, observed that he had used a steam plough for six or seven years. He would not now do without it, but if he had not one he would not buy one. He had, however, bought it and paid for it, and very useful it was; it did double the amount of work done by an ordinary implement. He would remind the meeting of the differences in the nature of the soil, some being light and others quite the reverse; and consequently, as he pointed out, different cultivation was required. He spoke of the inconveniences and difficulties occasioned by the shifting of the tackle, apparently forgotten in calculating

3s. per acre for ploughing. He had himself kept a correct account of the work which he had done. He could not do it at less than 6s. per acre, and he did not think any man could do it for less, reckoning everything. He agreed entirely with previous speakers on the point that the steam plough would double the amount of the work done by the ordinary plough. He pointed out that for the steam plough to be remunerative there must be considerable work—the owner must at least have 500 acres of arable land. [He used Howard's tackle; he thought Smith's was very good.] On small occupations of from 100 to 200 acres, where the fields did not extend over more than ten acres, the work could perhaps better be done without the steam plough, in consequence of the time taken up in shifting of tackle and getting water. While the latter was going on the ploughing could be done by horses. In conclusion, he repeated that he should not get rid of his present steam plough, but that if he had not one he should not buy one.

Mr. GENGÉ thought that Mr. Richardson's remarks were all on one side of the question. They had heard the opinions of gentlemen on the opposite side, and now they had to draw their own conclusions as to the advantages or otherwise of the steam plough. The question for their consideration resolved itself into this—whether a set of steam tackle was desirable or not on a farm. That, he thought, depended entirely on the extent of the farm. The system of hiring was, he considered, a very convenient one. There was this drawback, however, you could not always get the tackle at the precise time you wanted it. That was the rock on which so many split. Such was the amount of capital required to be invested in steam tackle that he was afraid it would be unproductive unless an extra price was charged for the work. The great point for consideration was the saving of horse labour. If you kept 80 horses and you could by the use of steam tackle dispense with most of them it would decidedly pay to effect the alteration. Mr. Gengé agreed that the differences in the character of the soil to be worked was a point of great importance for consideration. He was decidedly in favour of the steam plough on large farms. There must, he said, be plenty of work to make it pay.

Mr. G. W. HOMER also dwelt on the importance of there being a large extent of land in order to make the steam plough pay. He pointed out that on an extensive farm there was a deal of work to be done in the removal of stubble.

Mr. CHAPMAN SAUNDERS pointed out that the treading of the horses over the land in many cases did good.

Mr. DUKE reminded the meeting of the advantage of manuring the land well.

Mr. T. LOCK brought before the meeting the value of getting in the crops at the proper season.

Mr. ATKINS should say that the work could not be done at 3s. per acre.

The CHAIRMAN had very little to say, because he had never adopted any means of cultivation except horse and manual labour. Therefore he could not testify from personal experience of the value of the steam plough. But occasionally he looked over his neighbour's hedge and learnt a little. If he had a large occupation he should not have the least hesitation in adopting the steam plough. Mr. Richardson had, he thought, given them a capital lecture, and during its delivery he had made a few memoranda. The first note he had made was the cultivation of strong land. Now he had farmed strong land for 28 years, and he had no doubt of its being thoroughly adapted for steam cultivation. In some cases steam cultivation would, he considered, pay over and over again. In some instances a crust was formed on the ground, becoming an obstruction to the water going to the drains under. This, with other matters, had to be well considered. He pointed out that in chalky subsoils deep ploughing would never pay; that chalk at the top brought up by ploughing was no good and never would answer. He believed a great quantity of our light soils was rendered more productive by treading. He had not one word to say against steam cultivation. He expressed an opinion that there was a deal to learn before steam cultivation was generally adopted. He, however, set it down as for the good of agriculture and the good of the community generally. Regarding the cost of steam cultivation, he thought that the 5s. estimated by Mr. Richardson was the average on 2,000 acres. He, however,

could not speak positively on the subject. He was not experienced in the use of the steam plough. He had been a farmer a great many years, and he supposed that to the end of his days he should continue to use a two-horse plough, a man holding after. At the same time he had a son who had gone in for steam cultivation, and was now cultivating all his land by steam. If he were young and had sufficient capital he should probably fall into the same view as his son.

Mr. RICHARDSON pointed out that he had distinctly stated in the outset of his address that he did not intend to treat on the mechanical part of the subject. He was aware that there were many opinions respecting the different adaptations of machinery necessary to encounter the varied nature of the soils. He had come there to try to show them the beneficial and economical results of steam cultivation. When he told them that he had spent upwards of £20,000 in introducing steam cultivation before he had a penny in return, he thought they would say either he was a fool or ought to have learnt something. He was happy to say that what he had done had

fallen on a good soil, and was now returning a handsome income. In Berkshire he had introduced in one year three sets of ploughing tackle, on one single farm, where 1,100 acres had been worked. Respecting the 3s. per acre, he had never said the work could have been done for that. Was it at all likely that he would have said so? If he had done so they would have replied, he should think, by saying "Bring us down twenty sets and work our land directly." He begged them not to go away with the erroneous impression that he would work their land for 3s. per acre. He submitted that £2,000 laid out in steam ploughing would be well laid out, that the purchaser would be reimbursed 10 to 15 per cent. more than he would ever get by farming. He also submitted that he could work the steam plough nine months out of the twelve. At a trial at Bury St. Edmunds five acres and one rood was done in an hour. Meeting the difficulty of being able to get the steam plough when they wanted it, he recommended the contract system, which he looked upon as perfectly safe for the farmer.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, Wednesday, February 2.—President: Lord Walsingham, Vice-President, in the chair; the Earl of Lichfield, the Earl of Powis, Lord Chesham, Lord Tredegar, Lord Vernon, Sir Watkin Wynn, Bart., M.P., Mr. Barthropp, Mr. Booth, Mr. Bowly, Mr. Cantrell, Colonel Challoner, Mr. Davies, Mr. Dent, M.P., Mr. Druce, Mr. Edmunds, Mr. Brandreth Gibbs, Mr. Holland, Mr. Hornsby, Colonel Kingscote, M.P., Mr. Lawes, Mr. Leeds, Mr. Milward, Mr. Pain, Mr. Ransome, Mr. Rigden, Mr. Shuttleworth, Mr. Thompson, Mr. Torr, Mr. Webb, Mr. Whitehead, Mr. Jacob Wilson, and Dr. Voelcker.

The following members were elected:

Baillie, Lieut.-Col. Hugh Smith, Househill, Nairn, N.B.
Binney, Charles H., North Chesham, Sutton, Surrey
Blundell, J. H., Woodside, Laton
Botfield, Rev. W. B., Garnett, Decker Hill, Shifnal
Bull, J. H. W., Great Walford, Shipston-on-Stour
Burnham, W. H., Long Compton, Shipston-on-Stour
Carter, J. Quartly, Arborfield, Reading
Clarke, E. C., Manor Farm, Haddenham, Thame
Clifton, T. Henry, Lytham Hall, Lytham
Cockburn, George, Newcastle-on-Tyne
De Mornay, Alfred, Cold Harbour, Wallingford
Fair, Thomas, Westwood, Lytham
Fisher, E. Knapp, Market Harborough
Fisher, John, Wood House, Cross Hills
Ford, Sir Francis Colville, Bart., The Ridges, Hartfield, Tunbridge Wells
Fowler, Richard, Brompton Farm, Aylesbury
Fowler, William, Pauntley, Navent
Franklin, Thomas, Ascott, Wallingford
Franklin, W. Taylor, Ascott, Wallingford
Garrett, Richard, Carleton Hall, Saxmundham
Godwin, John, Troy Farm, Doddington, Oxon
Hall, Marriott, Thorpe Salvin, Woking
Higgs, John Birch, Brewood, Penkridge
Jackson, James, 6, Chapel Street, Preston
Lane, John, Winalow Hall, Bucks
Latham, Thomas, Wittenham, Abingdon
Little, Herbert J., Thorpeclands, Northampton
Manley, Augustus East, Manley Hall, Lichfield
Marshall, James, Low Horton, Cramlington
Marsland, William, Baguley Hall, Northenden
Masters, Albert Edward, Nevenson Hall, Chelmsford
Mitchell, John, The Beacon, Penkridge
Owen, Griffith H., Ynwlle, Tremadoc
Parr, John, Cropwell Butler, Bingham
Phelps, E. G. Hart, Bidley Parsonage, Wrotham

Roberts, Joseph, Caswell House, Witney
Singleton, John, Poulton Le Fylde
Smith, Samuel, Somerton, Deddington, Oxon
Stilgoe, Nathaniel, Manor Farm, Andebury, Banbury
Thomas, William, Penfields, Wolverhampton
Tomlin, J. R., Stoke Field, Newark
Tompkins, John, Town Farm, Irvinhoe, Tring
Tovey, Joseph, Cirencester
Turner, John, The Grange, Ulceby
Walton, H. L., Birmingham, Shipston-on-Stour
Wharton, G. Livingston, Grovehill, Beverley
Wheeler, John, Long Compton, Shipston-on-Stour
Whittall, Thomas, Bailey Inon, Llandrindod Wells
Wingfield, John H. L., Tickenote, Stamford
Woodcock, Richard, Wolverhampton
Wyatt, Robert, Acton Hill, Stafford.

FINANCES.—Colonel Kingscote, M.P., presented the report, from which it appeared that the Secretary's receipts during the past two months had been examined by the committee, and by Messrs. Quilter, Ball, and Co., the Society's accountants, and were found correct. The balance in the hands of the bankers on January 31 was £1,748 4s. 11d. The balance-sheet for the quarter ended December 31, 1869, and the statement of subscriptions and arrears, were laid upon the table; the amount of arrears then due being £1,150. One hundred and fifty-nine members have given notice during the past year of their withdrawal from the Society.

The committee reported that Mr. Wilkes, the junior clerk, wished to retire, owing to his health failing, and his having an engagement better adapted to him. They wished to express their entire satisfaction with Mr. Wilkes during the nine years that he has been in the employment of the Society; and they recommended that Mr. Hine, who has been employed as temporary clerk for some years past, should be appointed to succeed Mr. Wilkes. The Manchester country meeting account was laid before the Council, by which it appeared that the receipts exceeded the expenditure by £9,152 11s. 3d. It was recommended that the name of Mr. Davies be added to the list of the committee. This report having been adopted, a conversation arose with regard to the award made against the Manchester local committee for compensation to the tenant of the trial-fields; and Colonel

Challoner gave notice that, at the next Monthly Council, he would move—"That a sum of £500 be given to the Manchester local committee in aid of the extra expenditure occasioned by the compensation awarded to the tenant of the trial ground."

JOURNAL.—Mr. Thompson (chairman) reported that the committee recommended the publication of the February Number of the Journal as soon as possible, without waiting for the usual statistics. They also recommended that the annual lists of the Council and committee shall in future be circulated in March instead of February.—This report was adopted.

GENERAL OXFORD.—Lord Walsingham (chairman) reported the recommendation of the committee that the Oxford Stock Prize-sheet be finally closed.—This report was adopted.

EDUCATION.—Mr. Holland (chairman) laid before the Council the syllabus of subjects for examination in agricultural chemistry, botany, geology, land-surveying, and mechanics; and he reported that the committee recommended them being printed and circulated amongst candidates, together with a syllabus of subjects in general chemistry and in anatomy and animal physiology.—This report was adopted.

CHEMICAL.—Mr. Dent, M.P., reported that the committee had before them the correspondence between Messrs. Dobell and the consulting chemist and secretary of the Society. They decline to enter into the correspondence between Messrs. Dobell and Howden. They are satisfied that the sample of guano sent to Dr. Voelcker was described to him as "Guano genuine as imported," and that Dr. Voelcker's analysis of the manure was correct. It is no part of Dr. Voelcker's duty to inquire from the seller the price of an article submitted to him for analysis, but to give a correct analysis; and in cases where the constituents of such articles appear to be agriculturally valueless, this committee recommend the publication of the analysis to be continued. The object of publishing these analyses is not merely to show that the dealer is charging more than the value of the article sold, but to warn the purchaser against buying at any price an article which is of only a nominal agricultural value.

Professor Voelcker reported on a correspondence from the Foreign Office on the subject of guano now being imported from the Guanapé Islands, that he had made analyses of five different samples from bulk, which vary considerably in composition, and generally resemble Peruvian guano damaged by water. The variation in samples is so considerable that purchasers should be careful not to buy this guano without a guaranteed analysis. This is corroborated by the analysis furnished in the official report forwarded by the Board of Trade to the Society, where, out of 13 samples, the amount of ammonia varies from 3.8 to 14.1 per cent.*

It was moved by Mr. Milward, and seconded by Mr. Jacob Wilson, "That Messrs. Bowly and Sanday be paid

for their services as judges at Manchester, in accordance with the letters of the Secretary to them." After a discussion on the question whether there existed any rule to the contrary, which was decided in the negative, the motion was put from the chair, and carried unanimously.

Lord Vernon having moved the resolution of which he had given notice, it was seconded by Mr. Milward, and a rider was added, at the suggestion of Mr. Thompson. A discussion then arose as to whether judges were paid for their time, or only a sufficient sum to cover their expenses; and it was stated by Colonel Challoner and Lord Vernon that cases had arisen where members of Council had resigned their seats in consequence of their inability to perform the duties of the office of judge to which they had been elected without the usual payment. Lord Vernon, Colonel Challoner, and Lord Walsingham also commented on the desirability of obtaining the aid of the most competent men, whether they are on the Council or not. Ultimately the resolution, as amended, was carried, with one dissentient, as follows:—"That judges who are members of Council may be paid as other judges, by special vote of Council after a month's notice."

The Earl of Lichfield called the attention of the Council to the inconvenience arising out of the conditions of the charter fixing the date and place of holding the general meeting, and excluding from the Society's meetings the discussion of all subjects having reference to measures pending, or to be brought forward, in either House of Parliament. He sketched the history of the last reference of this subject to a committee; but as that committee had never reported, he wished to refer the matter once more to a committee for consideration. He also stated that many subjects enumerated in the existing charter as objects for which the Society was established, could not be discussed without reference to politics and to necessary legislation. Mr. Thompson stated, that although the time fixed by the charter for holding the annual meeting was very inconvenient, he did not think that alone would justify the expense of obtaining a new charter. He also drew a distinction between the functions of the Legislature in passing laws, and those of the Society in dealing with questions after those laws had been made. After a further discussion, in which Col. Challoner, Mr. Holland, and Mr. Dent, M.P., took part, the question as to the date of the annual meeting was, on the suggestion of Mr. Thompson, referred to the committee for the revision of the bye-laws.

It was moved by Mr. D. R. Davies, seconded by Mr. Jacob Wilson, and carried unanimously, that Sir Watkin W. Wynne be elected steward of live stock. Letters were received from the authorities of Shrewsbury, Stafford, and Wolverhampton, announcing their intention of inviting the Society to hold its country meeting for 1871 at their respective towns; and the Secretary was instructed to forward the usual documents to the mayors of the competing localities. Mr. Jacob Wilson gave notice that at the next Monthly Council he would move—"That the committee for the recommendation of judges be appointed at the March Council, that this committee shall sit in April, and that the absolute appointment of judges shall take place at the May Council."

Letters were read from the Secretary of State for Foreign Affairs, enclosing reports on the cultivation of Flax, received from her Majesty's Representatives at St. Petersburg, Brussels, and the Hague; and from the Secretary of the Board of Trade, enclosing a document entitled, "Notes on a new method of cultivating and in-

* The detailed official report is appended, having been forwarded to the Society by the Secretary of the Board of Trade, with a request that it should be made public.

creasing the productiveness of the soil." Thanks were ordered for these communications.

The following is the official report on the guano of the Guanapé Islands :

"The guano of the Guanapé Islands partakes of a composition varying much according to locality and depth. In general, on the North as well as on the South Island, the superficial strata exposed to the vicissitudes of the atmosphere are deficient in soluble salts, and consequently in ammonia, augmenting the proportion of phosphate of lime. In the lower strata, on the contrary, the quantity of ammoniacal salts augments, thus diminishing the phosphate of lime. It is probable that by the action which has dissolved the ammoniacal salts of the superficial strata, it may have penetrated by infiltration into the strata underneath, thus increasing the richness of the latter; so that in the end the ammonia, which forms the most valuable principle of guano, is not lost, being concentrated, as it is, in the deeper layers of guano. In the Southern Island the change is manifested in a manner still more evident, as of the three samples that have been analysed the most superficial contains only 7.562 per cent. of ammonia, and in the sample extracted from a greater depth the ammonia contained in 100 parts of guano rises to 18.020—a greater quantity than what is contained in the best guano of the Chincha Islands. This last is formed almost entirely (95,000) of ammoniacal salts soluble in water, consisting in greater part of oxalate and urate of ammonia, and should not be considered as a variety of guano, but as a combination of the soluble parts of the guano which appear to have been separated by the action of water. This sample, although possessing a strong ammoniacal smell equal to the guanoes of the best quality, differs nevertheless through its other physical characters, presenting itself under the form of a pulverulate homogeneous matter of a more pronounced yellow colour than that of common guano, and with a crystalline structure only to be perceived through the medium of a microscope. If the bed of this material is in reality 7 feet in thickness, according to Mr. Harris, who extracted the samples, it appears to me that a greater advantage could be obtained by selling this material to certain manufacturers of chemical productions as liquid ammonia; exalate of ammonia or uric acid could be extracted with much facility for the manufacture of the colouring matter called 'murexide.' As this sample is very rich in ammonia, and very poor, on the contrary, in phosphate of lime—containing less than 5:100 of this salt—it could not be employed with advantage in agriculture, one of the principal elements being wanting for plants; and in case it could not be sold, as was suggested, to manufacturers of chemical productions, it could be utilised very well by mixing it with the guano from the Lobos Islands, which in general contain a strong proportion of phosphate of lime, and *per contra*, is very poor in ammonia. By mixing the material in question this guano would be improved, and would cause the value of the guano of the Lobos Islands to be enhanced, equalising it with the guano of good quality. Some of the samples of guano from Guanapé subjected to analysis contain a strong proportion of water, so that when the guano is pounded in a mortar with the object of rendering it more homogeneous before proceeding to analyse it, it collects and forms a really sticky paste. At first sight it would be said that this guano had been wetted; but recognizing the great hygrometric power which guano has, and knowing that the sample in question had been extracted in winter time, when the atmosphere of the coast is almost entirely saturated with water, the great quantity of moisture which it contains is easily explained. I myself at another period made some experiments for studying the hygrometric power of guano, by keeping exposed to the open air a certain weighed quantity of guano, and I have beheld it increase or diminish in weight according as the weather was more or less dry. The element which is of most value in guano, after the ammonia, is phosphoric acid; but, as is known, almost the whole of the phosphoric acid contained in the guano is found combined with lime, forming a phosphate of lime, tribasic, not very soluble in water, and consequently absorbed with difficulty by plants. Various chemists who busy themselves with the study of guano have thought, and with justice, that by rendering the phosphoric acid contained in guano more soluble in water, and consequently easier to be absorbed by plants, the value of this mate-

rial would be augmented. So for many years Mr. Nesbit advised mixing guano with sulphuric acid, the which, by uniting itself with part of the lime, leaves free a part of phosphoric acid, which forms with the other portion of the lime a phosphatic acid, easily soluble in water. Mr. Richardson put this theory in practice, and even asked for a patent for the transformation and amelioration of guano. Now, as not the whole quantity of phosphoric acid contained in guano is found in a state insoluble, under the form of tri-phosphate of lime, I have deemed it necessary in the analysis which I have made to make known likewise the proportion of soluble phosphoric acid which the guano of Guanapé contains, as will be seen by the table giving the result of the analysis."

AMMONIA CONTAINED IN 100 PARTS OF GUANO.....	NUMBER OF THE SAMPLES.	NORTH ISLAND.										SOUTH ISLAND.		
		1	2	3	4	5	6	7	8	9	10	1	2	3
Hygrometric water.....		21.260	19.500	22.860	20.150	22.300	20.250	21.400	20.850	20.600	18.500	16.750	24.900	20.860
Volatile matters and salts.....		29.300	40.050	47.950	38.150	43.100	46.950	43.200	44.600	44.600	46.750	33.350	26.900	72.500
Alkaline salts.....		4.310	4.630	1.510	4.700	5.225	4.100	4.050	6.100	6.100	3.050	5.300	3.485	1.550
Soluble phosphoric acid.....		4.10	.450	.540	.750	.575	.600	.850	.450	8.000	.450	.900	.385	.150
Tribasic phosphate of lime.....		41.950	33.400	25.775	34.450	27.500	25.500	22.225	22.600	22.600	27.000	42.500	32.600	4.900
Sand and clay.....		2.750	1.950	1.375	1.800	1.600	3.300	1.675	5.750	6.400	1.260	2.200	1.750	.260
		100-000	100-000	100-000	100-000	100-000	100-000	100-000	100-000	100-000	100-000	100-000	100-000	100-000
		6-730	11-690	16-216	3-876	10-812	10-500	10-735	11-420	10-916	14-184	7-882	8-400	18-020

ANALYSIS OF THE GUANAPE GUANO.

THE BREEDING AND FEEDING OF LAMBS.

At the first monthly meeting of the Lavenham Farmers' Club for the present year, Mr. GREENE, M.P., was announced to read a paper on this subject.

Mr. HITCHCOCK, the Chairman, said there were not less than thirty million of sheep in this country, and at 30s. each they represented a capital of £45,000,000. But it was not merely their money value which was of importance, for sheep formed an important element in the food of the nation, and their object should be to increase the number. The high price of mutton, occasioned partly by the cattle-plague and partly by the drought of 1868, had given dissatisfaction to many people, and they were now turning their attention to the importation of carcases from Australia and South America. Whether or not that would answer remained to be proved, but he hoped they would not be overwhelmed with an avalanche of mutton of Professor Gamgee's curing. They were now suffering from a plethora of wheat, and if they were to be overwhelmed with a supply of meat also they might soon be in the position of the Irishman who, when complaining of the price of potatoes in England, and saying that he could buy as many in Ireland for sixpence as he could here for a shilling, was asked why he did not stay in Ireland, and he replied, "There were no sixpences there."

Mr. GREENE said: First and foremost is the selection of your ewe. We have arrived at a time when, in this country, we have lost our distinctive breed of sheep. Many here must remember when on most farms there was a flock of South-down ewes; but as the price of wool and meat advanced, farmers turned their attention to getting a sheep that would clip more wool and breed a larger lamb; hence they crossed their Downs with a long-wool tup and were handsomely repaid in their first cross. But as their Down ewes wore out they commenced breeding from the half-bred ewe, and I am inclined to think if they had continued judiciously to tup with half-bred tups, which half-bred having either Sussex Down, or Hampshire Down on one side, they would have been more successful. I was favoured by that well-known breeder of sheep Mr. Lagar, of Ingham, with a sight of his flock of ewes, bred as I have described, and very even well-formed ewes they are, combining both mutton and wool. His foundation was South-down ewes. I am of opinion that although the black-faced ewe is a valuable animal for one cross, yet it is not desirable to breed from her produce, she not being a pure-bred animal herself—hence it is we see so many long-legged, slow-grazing lambs. I myself have bred from several different classes of ewes, and have found no animal gives me so good a lamb as a well-bred Hampshire ewe crossed with a Lincoln or one of Aylmer's tups; but from the necessity of frequently purchasing the ewes at a high price, I am about to test the merits of the Shropshire sheep, and for that purpose have selected some of the best bred ewes and tups I could find, combining the aptitude of the fattening of the Down with more size, and I expect to be able to carry, on the same food, more sheep than of the half-bred kind. Should this be the case, I shall be able to keep up my own flock without going to market. In my remarks on sheep it must be borne in mind that my experience applies chiefly to light land suitable to sheep. I believe the dry seasons we have had for two or three years previous to this has led many heavy land farmers to attempt breeding sheep, and unless they have a fair acreage of pasture saved up after the hay is cut to winter upon, they cannot breed to a profit on a large scale, they being unable to keep their sheep on the land in winter. I have observed that ewes on cold land require much more expensive feeding than on light—on heavy land I should graze in summer. Having judiciously selected the ewe and tup, I am in favour of putting the tups with the ewes in the third week in August, or first week in September, so as to have most of your lambs born in February. My reason is, that an early lamb is always a superior animal to those that come later, and I am about to state that which at first sight will, I know, be questioned, and that is—you are better off for food at that season than when you lamb in March; as every gentleman in

this room will allow that in February and the early part of March his white turnips are better than later on, and, moreover, they ought to be fed off, and the barley sown early in March. You will, very properly, think—well, what is now to be done? I will tell you. No man is worthy to be called a flockmaster whose thoughts are not always looking forward for months as to how his sheep are to be fed. I will, therefore, hark back to my ewes at tugging time. Having fixed the third week in August or first week in September, and having previously got my ewes into good condition, which I think very important, as I find a ewe in high condition in the autumn is wintered very much cheaper and with less loss than a poor one, I then, if possible, divide them into lots of from fifty to eighty, and prefer having only one tup with them at a time. I tup on early sown turnips, or coleseed and young layers, according to the seasons. My ewes having been tugged, I have a bit of mustard and a run on some old grass, and as soon as my mangold is off I fold the land, having two rows of swedes and one row of cabbages to every ten rows put in with my mangold, and this with a run out for an hour or two on grass and a little chaff carries me on until lambing time. One thing I have found very important is to avoid allowing them to eat food with the frost upon it. I believe food of that kind is very injurious to ewes in lamb. I may say, in passing, I am against stuffing ewes with a lot of straw chaff. My twelve score ewes have four bags, of eight bushels each, daily of cut pea straw this year; and when that is done I shall mix one-third hay with straw. I put a bushel of bran into each bag; and my ewes are looking well. The mangold land will be finished about a fortnight before the ewes lamb, as I like to put them on white turnips for a short time, it helps their milk. I always now plant a few acres of cabbages in June ready for lambing, as they are invaluable to put in the pens when ewes first lamb, and to strew about under hedgerows for the ewes until the lambs are strong enough to go to turnips. I give my ewes artificial food—either cake, malt dust, or oats—for the first few weeks after lambing, at a cost of 3d. or 4d. per head. When my ewes leave the turnips, I have provided after harvest on a wheat stubble a mixture of rye, wheat, tares, coleseed, and green round turnips; from that I go to rye, and then on to a bit of rye-grass sown in the wheat; and this, with a very few acres of layer, say 10—as I mow all I can—carries my sheep on until after the feed is ready. Now, having bred your lambs right, comes the point, how are they to be managed in the most profitable manner? I believe by never allowing them to go back so as to lose their lamb fat. My shepherd teaches my lambs to feed as soon as possible, with a little bran, crushed oats, and linseed cake for a few weeks; then cotton and linseed; and I spend about 1½d. to 2d. per head a week upon them until September or October, when I increase it to 3d. until the end of December, and then for a few weeks up to 6d. per head for artificial food, seldom exceeding that sum. The lambs, of course, run forward through lamb hurdles, and I do not cut them young, but sear them in May or the first week in June, when I clip the ewes and take off the lambs. I have also tried the experiment of clipping lambs in June, and if you wish to force your lambs to an early market in January, I believe it will thoroughly answer. I find the clipped ones grow faster on the same food. I tried a few lambs, and when I sold my lambs to a gentleman I now see in the room, I think he will bear me out that they were certainly not the worst among them. The lambs being off, the ewes are then folded on the layers, and I generally grow a bit of coleseed as a change of food, which is very essential. I need not remark I am very careful not to put the lambs on layers that have been mucked or folded, as that will surely kill or injure them. Great care is required that the lambs have always water by them in the summer. If you depend upon driving them to water, they may miss drinking one day, and the next will take more than is good for them. They should also have rock salt. It is important when the sun is hot that the lambs should be put into the shade in the middle of the day. Besides the advantage to your land, and to your lambs generally of giving them artificial

food, you make a good price of your refuse. I sold three score of my refuse, not leaving one behind, this last September, at 24s. each, and I am sure, had they had no assistance, they would not have fetched more than 16s., so that in that lot alone I had £24 for cake. Layers, mustards, &c., being done, I begin with a few acres of white turnips, and then, about the 1st December, get on to swedes, having them clamped on the land: they are cut by Gardner's cutter, and I never give swedes whole. Judgment is required, on every change of food, not to overdo your lambs. I always have a double fold and double set of troughs, so that the lambs are shut back and all the food put in the troughs first, which gives every lamb a fair chance, and prevents the strong ones pushing the weaker ones aside. I think ten score is the outside number that ought to be in one fold. In the middle of February I sell my hoggets, many of them fat; some one buys them to finish, and, as "the proof of the pudding is in the eating," I shall probably sell them to a gentleman I see in this room, and you will most likely see them in Bury market and judge for yourselves. I do not see how a farmer is to pay his rent and expenses off a light land farm unless the gross price of his lambs come up to the rent. I believe the advantage both in corn, meat and money is in favour of keeping your lambs and sheep well. I never sell my ewes and old ewes at less than from 35s. to 42s.—fresh, not fat—and take lambs, treated as I have described, on 1st August to be worth 32s. each. Spend 3d. per head per week for artificial food up to 21st December (20 weeks), 5s. per head; from 21st December to 21st February is 9 weeks at 6d., 4s. 6d., which brings the cost price up to 41s. 6d., and you may reckon on the average of years they will be worth 50s., leaving £8 10s. per score for turnips, &c., the breeder having been well paid on the value of his lambs on the 1st August. If I was going to clip my hoggets, and feed them off in summer, I should treat them as described, but at less expense for artificial food; but always bear in mind with every animal for meat, never to lose its young fat. Every pound of meat lost, costs money to replace—a loss of 1lb. at 9d., costs 8d. to put on, which makes 1s. 6d. I must say on riding about the country I have observed in many instances a great want of management in sheep; but by keeping a strict eye to their well-doing, they must pay. Mind, I am against extravagance in feeding animals. I believe much money is wasted in giving too much artificial food to both sheep and bullocks. They require a diversity of food, and can only assimilate profitably a certain quantity; but the more you mix cake with other descriptions of grain, in my opinion, the better; and though you may say I am recommending my own wares, a few grains will be found to assist lambs very much. Times are now not very cheery for farmers. The dry summer of 1868 and the light crop and low price of wheat in 1869 will prove trying to many; but put on a good heart, look well to your stock and land—both are grateful for good treatment. I have had 40 years' experience in business, and have witnessed frequent changes of depression and prosperity; but have generally found the persevering succeed. In conclusion, I can only say plough and sow, tend well your stock, and look with humble faith to Him who always blesses honest labour. If I have only caused by these remarks further thought on the subject amongst you, my brother farmers, if I may call myself one, I shall feel amply repaid. There was one little remark he had forgotten. He had a double set of troughs, and he did not put turnips in the same trough with the cake. His sheep of course always had a little cake and chaff the first thing in the morning and the last thing at night, as it was very important they should have something of a dry nature before going to the cold food. He was particularly careful, if his sheep were on turnips, not to let them eat turnips till the frost was off them in the morning, as he had found frosted food very injurious.

The CHAIRMAN next called upon Mr. Badham, and invited him to make some remarks upon Mr. Greene's paper.

Mr. BADHAM said that he had not paid so much attention to sheep as he had to some other animals, and he thought it was very likely he had been a loser by it—he had no doubt of it. He was foolish enough to stick to the little Southdowns. He did not know that much advantage was gained by it except that he kept good animals, and always got good mutton. He cordially agreed with what Mr. Greene had said about clean troughs, and also as to guarding against frost, which did great mischief, especially to sheep.

Mr. BIDDLELL said his experience was very much like Mr. Badham's—in favour of the Southdown ewe. Some years back he had the misfortune to have his stock afflicted with the cattle-plague, and by necessity he was compelled to turn his attention to sheep. He enlarged his flock so that he kept a little more than an ewe to the acre, viz., 20 score on 380 acres of land. He was highly gratified at the result, and some persons went so far as to say that his sheep more than made up what he had suffered from the cattle-plague, but he was not at all sure they were right in that. It, however, led him to think what he could do with keeping ewes on heavy land. He had the advantage of a good deal of pasture, nearly all of which he used to mow, but he thought it was quite possible to keep sheep with profit on heavy land. Ever since what he might call the discovery of beetroot (for it had been introduced within the memory of the present generation) they had been placed in a much more favourable position in reference to keeping sheep than formerly. Till then they had nothing to give their sheep in April and May, for turnips would not keep so long, and if they had had to depend upon hay he was sure the balance would have been "over the left," for he did not think they could find a more expensive thing to feed sheep upon. But since they had had beetroot they could dispense with hay.

Mr. GREENE: How do you keep sheep on heavy land in wet weather?

Mr. BIDDLELL said when he could not keep them on the land he took them off and put them in the yard. He suggested that if they could grow some rows of turnips or cabbages with their beet, and so get some sheep feed on the land, the land would be greatly improved. With regard to the time of tupping, if the object was to sell the lambs, no doubt the sooner they were dropped the better; but if they intended keeping them, he doubted whether it was advisable to tup so early as Mr. Greene had stated. Though they came early they would be found to have very large appetites when food began to run short.

Mr. GREENE: You ought not to be short of food in April.

Mr. BIDDLELL said sometimes May was a very backward month.

Mr. GREENE said there was the rye, and he had never known the May in which he had not had a good bite for sheep on the rye-grass.

Mr. BIDDLELL said he remembered when there was none, but at the same time he admitted that that was an exceptional year. With regard to artificial food, he quite agreed with Mr. Greene that while mutton sold as it had done the last few years, they must not grudge 5s. a score per week for food of that description, and he believed they would be amply repaid; at the same time he had found a very nice balance-sheet without such assistance when food had been plentiful. With respect to layers, he considered that on heavy land they were the most expensive food they had. His practice had been to have very little layer, but to get a piece of rye-grass early, and then he could put them on to a meadow; or if he put in coleworts in May he got a very good crop in July and August; and he was persuaded that with attention they might be got by that time on heavy land. Some people got two crops of colewort, and if they could not do that they might get mustard, which was a good preparation for wheat, and between the two he thought they would have much better feed than by feeding on layers. With regard to clipping lambs, his experience was very limited. He never clipped but two, one of which died, and the other was as near death as possible. After they were shorn there came some scalding hot weather, and the sun took such an effect upon their skins as to make them peel. At the same time, he had fancied that some of his long-wooled sheep were greatly incommoded by having to carry their wool till March. As to cutting turnips, he was an advocate for allowing the sheep to cut their own food, provided they were white turnips. Swedes required cutting, and he thought all turnips should be cut after the animals' teeth began to loosen. He quite endorsed Mr. Greene's opinion that the sheep ought to pay the rent on a light land farm, and he was of opinion that, even in that locality, they might do more towards making the sheep pay the rent than they now did, and he strongly recommended the members of the Club to try.

Mr. BIDDLELL observed that Mr. Catchpole kept a good many sheep on heavy land, and asked for his experience.

Mr. CATCHPOLE said it was true he kept several on heavy

had, but he got them off it as soon as he could. He thought, however, they might be kept with good management.

Mr. EDGAR thought they might keep more sheep on heavy land than they had hitherto done. Mr. Biddell said he remembered one year when rye-grass did not come in May; but he (Mr. Edgar) never knew the year when there was not a good feed on rye-grass on heavy land in the third week in April, and, he thought there was a little more "fire" wanted under the grass Mr. Biddell referred to.

Mr. TALBOT said if they were sheep breeders (as they must be upon light land) he thought it was of the greatest importance to have the true-bred animals on both sides; and with regard to those for grazing purposes he should certainly say take the first cross. He was induced some few years ago by the representations of a few of those whom he considered his friends, to go in for true-bred animals, and he purchased some of the black-faced improved Suffolks. He purchased them of a well-known breeder, Mr. Dobito, and if he had stuck to those sheep he should soon have been ruined; he never in his life saw sheep with such appetites. He was very glad to get rid of them, and he certainly did not think they were the sort for the farmer to live by. The mutton might suit the epicure, but it was a little too rich for the farmer. As to keeping sheep on heavy land, where could they have been put during such weather as had been experienced during the last two or three months? They could not have sheds to keep them in the dry, and if they had been put on pastures, they would be ruined. The Suffolk pastures were not particularly good, nor particularly well farmed; but if ever so well farmed, the grass would be materially injured in an unkindly spring by sheep being put upon them. The only farm he knew in that neighbourhood on which the pastures did not appear to be injured by keeping sheep upon them was Mr. Hustler's, at Cockfield; but there it was well known were extremely good pastures, and that was quite quite an isolated case. With regard to the supply of food in the spring, if they were to carry out what had been said by Mr. Greene, and save up all their pasture in the autumn, ready for the spring, he was afraid they would not keep so much stock. They must provide certain food to keep their sheep in the winter and spring, but every practical farmer would agree with him that it was impossible to spare all their pastures for that particular purpose; if so they must very materially reduce the number of animals kept on the farm, and that he did not think was altogether the thing in the present day. As Mr. Biddell had observed, if there was anything of a paying nature connected with farming, it was sheep, and to these they must turn their attention. As far as corn was concerned, and especially wheat, they must never expect a very high average for it again; they had the whole world to go to, and even at the present price, 41s. a quarter, large quantities were constantly arriving. Therefore it behoved every tenant farmer to keep the greatest number of sheep he could, and that could only be done by using a certain amount of artificial food with the products of the farm, for there was a vast proportion of heavy land that would not graze sheep without food of some other kind. Grains might be very good, though he did not recommend them, and if he used them he should not buy them at Mr. Greene's, as he did not believe in the grains of A.K.

Mr. HUSTLER could not agree with Mr. Biddell as to the feeding on layers, and was inclined to look upon this as one of their best pieces of farming upon heavy land. If the land was good they got a capital crop; and where did animals do better than on a good layer? On a poor heavy land farm they did not get enough to mow; and what could they do better than feed it with sheep? He thought they might safely calculate on a good crop of wheat if they fed off their layers, more especially if they gave the sheep artificial food as well. He quite agreed that they might keep more sheep than they now did on heavy land by laying a little forward, and preparing for the spring; and as soon as he got his layer he felt that he could carry his sheep on through the year.

Mr. VINCE said he had been a heavy-land farmer all his life, but he was quite an amateur in sheep-breeding. He, however, had no doubt that if all light-land farmers took a lesson from Mr. Greene's paper they would not go much amiss. He believed they might keep more sheep than they now did by looking forward, and growing a little bit of rye grass and a bit of turnips and so on. He had always found sheep more profitable than many parts of farming, and should certainly

endeavour in future to keep more than he had hitherto done. If they kept only a small stock of breeding sheep they might buy in some hoggets early in the spring, and he believed they might improve their land as well as make the sheep pay.

Mr. HAWKINS said: Being a heavy land district, that locality was not much adapted for breeding sheep; but he was very fond of them, and was satisfied that if he dispensed with sheep he should have to shut up, for were it not for his sheep he did not believe he should have any profit on his stock. He generally set seven score of ewes, and bred fat lambs; he got his ewes in as good condition as he could, and kept the lambs as high as possible. To show them that he was not far wrong, he might state that his lambs generally brought him 35s. to 37s. each in the month of July. He felt quite sure that heavy land farms might be improved by keeping an increased number of sheep, and when they looked at the price mutton had made of late, he felt sure it paid them better than any other stock they could graze. His being a heavy land farm, he could not fold upon the land; but he found no difficulty in keeping his ewes and rearing and fattening his lambs. The only difficulty was to get the money to buy the food, but he grew everything except cake. He had found that the lambs obtained more benefit from giving the ewes cake than from giving it to the lambs themselves. He always used Mr. Aylmer's sheep, which produced most beautiful lambs. Sheep, he was convinced, were the mainstay of a light land occupation, and half the mainstay of a heavy land farm.

Mr. BIDDELL said Mr. Hustler had asked what he was to do with his layer if he did not feed it; but he might reply that there was no necessity to have one at all. He was sure if Mr. Hustler would keep an account of how many sheep he could keep on a layer, he would find that it would not pay him. He preferred himself coleworts, with mustard after. He might say when he experimented in clipping lambs it was in August, but Mr. Greene clipped in June. His were tup lambs, and they were ill because the sun got on their backs. Perhaps if they had been in the shade they might have got on better.

Mr. GREENE, in replying, said there were two things he liked—a good horse and a good sheep; very opposite animals, perhaps. To have given them an address upon the breeding of horses—well-bred hunters—would have been speaking Greek to them, so he had chosen his present subject. He did not want to dictate to them—to say that he was all right, and they were all wrong—he simply told them his own experience with sheep, which at any rate had brought him, if not profit, at least credit; for he thought he might say without egotism he had never had a bad lot yet. He only took up the subject some ten or twelve years ago, and then it was for his own amusement; and he thought when a man did that he must be able to afford it, for the profits would never blind him. He quite agreed with Mr. Biddell about the Southdowns, and he was inclined to think farmers deserted them too soon. Mr. Kersey Cooper, who would have been there that evening if he had been able, had often laughed at him because he had tried almost every description of sheep. He had now bought some Shropshires, and he had got his nearly like the Downs, but with more size. He thought if the Downs had the same chance as the half-breds, and they let them have the best food, farmers would be able to carry more sheep per acre. This, however, was speculation, for he had not tried it. On heavy land he was sure sheep would pay if they could only keep them about on the pastures, and in the yards at night, and have mangolds to give them. But that was a matter he must leave to heavy land farmers. With regard to clipping lambs, he was there only to tell them what he had done himself. He clipped only a few, neither the best nor the worst, and when he sold the lot he believed the clipped lambs were worth 7s. 6d. each more than the others in the lot. He would not recommend them to clip those they were going to keep, as at clipping time they would lose some wool—he did not know what amount. The lambs clipped about 3lbs. in May, and he should think on the average they would clip about 3lbs. The wool made about 9d. a pound; that would be 2s. Mr. Biddell's experience was with two; his was with three score, and he had not lost one. Last June, after clipping, there was some extraordinarily cold weather, and he lost three ewes, although they had cake, but the lambs did not appear to suffer, and he never lost one. He had not fed the clipped ones differently to the un-

clipped. He selected five of the largest and sent them to market, just to see what they were worth, and although he contended that they did not fetch within 4s. of what they were worth, they made 53s. 6d. each; they might judge they were pretty fair hoggets to fetch that, and yet they had not half-a-pound of cake a-day. He thought he should force his clipped lambs more than the others, and he believed they would bear it, and he should get them to market when mutton was dear. He wanted to impress upon them the importance of early tugging. He was speaking now of a light farm, because, as he had said before, he had never farmed heavy land, and he hoped he never should. He liked land over which he could ride without dirtying his horse or splashing his boots. He must recommend early lambing, and one failure was no proof against it. They failed in one thing, but in how many did

they succeed. If he farmed heavy land he should be inclined to follow Mr. Hawkins's plan, and fat both ewe and lamb every year. If they forced a ewe well they could do it, but they must put their hand in their pocket for without that they could do nothing. He believed February or March was the best time for lambing, and it suited the land best, too. He once passed a piece of land belonging to a man who did not spend much on his ewes, and he believed through not putting his hand in his pocket for some cake, that man lost three combes an acre of barley on twenty acres of land. Although he never let his lambs be without cake or bran, yet depend upon it, the cake to the ewe was the secret of making the lamb look well, and then, besides, if one of their ewes did not please them, they could sell her at a very good price. Still they must not be extravagant, for they would also lose by that.

THE SMITHFIELD CLUB.

At a meeting of the Council held Feb. 1, 1870, present: the Earl of Powis, President, in the chair; Lord Tredegar, Messrs. J. D. Allen, H. Aylmer, J. N. Beasley, C. S. Bigge, W. B. Canning, John Clayden, Samuel Druce, Thos. Duckham, J. Druce, J. H. Downing, W. Farthing, C. Howard, Jas. Howard, M.P., R. Leeds, H. Overman, Jno. Painter, Wm. Rigden, Wm. Torr, J. S. Turner, Thos. Twitchell, Brandreth Gibbs (Hon. Secretary).—the minutes of the last Council meeting were read and confirmed.

The Stewards reported on the cases referred to them as to the qualification of certain animals at the last show. The Hon. Secretary was requested to communicate with one of the exhibitors in reference thereto, and the reply to be laid before a Special Council, which the President was requested to order to be summoned in May.

Mr. R. J. Newton, of Campsfield, Woodstock, and Mr. Wm. Sanday, of Radcliffe-on-Trent, were elected Stewards of live stock for the ensuing three years.

Mr. Joseph Druce and Mr. Robert Leeds were re-appointed stewards of implements for this year.

The Council proceeded to revise the Prize Sheet for this year's show.

For Scotch horned classes it was determined to substitute the words "West Highland breed" and to establish distinct classes for "Other Scotch horned breed," viz.: Steers or oxen of any age, the prize of £10 and silver medal to the breeder; heifers and cows of any age, the prize of £10 and silver medal to the breeder.

It was resolved to establish a new class in each of the following divisions of sheep, viz.: Leicesters, Cotswolds, Lincolns, Southdowns, Hampshire, or Wiltshire, Shropshire, and Oxfordshire, for pens of 3 ewes above 3 years old, and that must have had a lamb; the prize of £10 and silver medal to the breeder.

It was resolved that the prizes two-year-old Southdowns be first prize £15, second £10; also, that the two-year-old class for Hampshire or Wiltshire Downs be discontinued; also, that in the two-year-old Oxfordshire class there be only one prize of £10; also, that the Ryeland, Cheviot, and Dorset divisions stand before the Mountain in the prize sheet.

The Champion Prize Plate of £100 for the best Beast in the Show.

The Champion Prize Plate of £50, for the best pen of Sheep in the Show, be again offered; but that the Champion Plate for the best single Sheep be discontinued.

In the condition of the silver cups, in the division for Shropshire, Oxfordshire, cross-bred, or any other breed not before specified, the words 1 year old be inserted so as to limit the competition to one year old Sheep, as already in the Southdown divisions.

That the Prizes in Extra Stock, Steers, or Oxen and Cows, or Heifers, be increased from 25 to £10.

That all the Silver Medals for single Sheep in Extra Stock be abolished; and, in lieu thereof, a Silver Cup, not exceeding

£25 in value, be given for the best wether in the following divisions:

1st. Leicesters, Cotswolds, Lincoln, and Kentish or other long wools.

2nd. Southdowns, Hampshire, or Wiltshire Downs.

3rd. Shropshire, Oxfordshire, cross-bred, or any other breed of Sheep not specified above.

Also, that a Silver Cup as above be given for the best single Pig in Extra Stock.

The wording of Rule 17 was amended.

It was resolved, That it be an instruction to the Judges Selection Committee not to appoint as judges any persons who will act as judges at the Birmingham Cattle Show the same year.

It was resolved:

1. That more stringent means be taken to prevent exhibitors and others entering the Hall previous to the day of judging, and that the attention of the directors of the Agricultural Hall Company be specially called to this point.
2. That the Club shall engage an official of its own in order to check any persons who may have got past the ordinary door-keeper hitherto appointed.
3. That the exhibitors and attendants in the implement galleries shall not have access to the ground floor, and that they shall have a distinct ticket, and be admitted by a doorway, so arranged as to allow of their going direct to the galleries.
4. That the stewards be empowered to incur such expenses as may be found necessary to carry out the above.

It was resolved, That the stewards be requested to revise the classification of breeds to be adjudicated upon by each set of judges.

The report of the Show-yard Committee as to proposed alterations was read, and referred to the same Committee to go into further detail to confer with the Directors of the Agricultural Hall Company, and to report to the Council to be held in May.

The Implement Committee was re-appointed for the present year, with the same powers as heretofore.

Letters were read and referred to the Implement Committee.

Also a memorial respecting the charges and arrangements for cattle conveyances was referred to the stewards.

The honorary secretary was requested to communicate with the Privy Council and the Metropolitan Board of Works, to see if the advertisement relative to the license for holding the Club's Show could not be curtailed by omitting apparently unnecessary details.

The following were elected members of the Club:—Wm. Webb Turner, of Chyngton, Seaford, Sussex; Mrs. Gerard Creswell, of Appleton Hall, Sandringham, Lynn, Norfolk.

A vote of thanks was passed to the Earl of Powis for his conduct in the chair.

THE MANAGEMENT OF THE SMITHFIELD CLUB SHOW.

It is seldom that any desire to reform abuses or correct mistakes has been set about with more vigorous determination than there has just been displayed by the management of the great Smithfield show. The tone of the whole sitting is eminently healthy and encouraging, as there is not a weak place but through which a new rail has been laid or a bit of fresh quick planted. On the opening day of the last show we protested against the same judges coming on from Birmingham to Islington, as we spoke to "the murmurs growing louder and louder as the awards still went the same way;" while we added that "Mr. Parrington at the best managed meeting we have, makes it an indispensable condition that any judge who accepts office at the Yorkshire in August should not have acted at the Royal Society's Show in July; and the Smithfield Club must do the same by the Birmingham." And the Smithfield Club has done so, for at the last Meeting it was resolved—the motion standing in the name of Lord Bridport—"that it be an instruction to the Judges' Selection Committee *not* to appoint as judges any persons who will act as judges at the Birmingham Cattle Show in the same year." Then, during the week we dwelt on the very unsatisfactory ruling in the Scotch-Horn breed or breeds, suggesting that the West Highlanders should be honoured with a class of their own. One of the late stewards, we believe, opposed this proposal, but the meeting adopted it, and "for Scotch Horned it was determined to substitute West Highland breed;" while distinct classes are to be established for "other Scotch horned breeds," which, save by crosses, we have not the slightest idea of ever seeing filled. Some alterations were made in the arrangement of the sheep classes, but no notice was taken of one of the judges' suggestion to do away with the light-weight Southdowns, nor of that from another as to "one of the judges in each class being a butcher;" about the very worst notion offered for many a long day. The complaint at the recent show was that the judges went a deal too often like butchers as it was; take, for instance, that very Highlander class, where they went clear away from character and style. A good heavy cross would generally promise to be the most valuable beast to the butcher; but, then, what are crosses without breeds? Horse-dealers, veterinary surgeons, butchers and salesmen should never be asked to act as judges at our great national meetings; for, like Mr. Weller, their "wisdom is limited."

But in the week after the Show, on the Monday, as this closed on the Friday, we were bold enough to go still further, and in the face of its "great success" and the "more money than ever taken at the doors," to declare that "nothing could be more unsatisfactory, not to say discreditable, than the condition into which the management of the Smithfield Club Cattle Show was gradually drifting." Of course we were quite prepared to hear, as we did hear, that this was finding fault merely for the sake of fault-finding, and so forth; although, nevertheless, we went on to demonstrate how very lax the system was becoming; how some exhibitors were let in and others were kept out; how the Hall Company was feeding up its own prize reporter; and how other "gentlemen of the Press" were quite content to pass for implement makers' assistants.

And at the February Meeting the following resolutions were put and carried, on the motion of Mr. Henry Overman, and with the hearty concurrence of the director of the show: "1. That more stringent means be taken to prevent exhibitors and others entering the Hall previous to the day of judging, and that the attention of the directors of the Agricultural Hall Company be specially called to this point. 2. That the Club shall engage an official of its own in order to check any persons who may have got past the ordinary door-keeper hitherto appointed. 3. That the exhibitors and attendants in the implement galleries shall not have access to the ground floor, and that they shall have a distinct ticket, and be admitted by a doorway, so arranged as to allow of their going direct to the galleries. 4. That the stewards be empowered to incur such expense as may be found necessary to carry out the above." The point of these resolutions, as we take it, centres on the Club providing an official check of *its own* and on the stewards having full power, or rather *sole* power. The Agricultural Hall Company has, or should have, no more share in the management at Islington than Mr. Boulnois had in Baker-street; as, in fact, the Club and the Company cannot be kept too distinct from each other. And yet on the very title-page of the Club catalogue we see officially paraded the names in full of the chairman and the secretary—not of the Club, but of the Company! where they have about as much right to be as on the cover of the catalogue of the Royal Academy. Again, running across every page of the Smithfield Club catalogue, we have in large lettering the announcement of the Islington Horse Show, just as if it were one and the same concern! Let the Islington Hall Horse Show be advertised, and let the chairman and secretary of the Islington Hall Company advertise themselves by all manner of means in the proper place, which we imagine to be the general advertising sheet; but unless the Smithfield Club is to be handed over bodily to the Hall Company, it certainly does seem that the names of the president and honorary secretary of the Club should, if any, grace the title page, as that for all sorts of reasons it is very desirable that the national cattle show should not be in any way associated with the Christmas circus, the summer Horse Show, or any other mountebank performances which may take place at other times within the Hall. As little "liberties" of this kind commonly lead on to more serious encroachments they cannot too soon be corrected.

THE ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.—At the monthly meeting of the Council on Tuesday, February 1st, present, Messrs. C. S. Cantrell (in the chair) T. Beddall, J. Collins, H. Corbet, A. Garrett, A. H. Johnson, J. Naish, and J. Scott, it was resolved, that, at the forthcoming election, 40 names should be added to the present list of pensioners, viz., 10 male, 20 female, and 10 married candidates, thus raising the total number of pensioners to 170, not including the orphan children boarded and educated by the Society. The annual dinner was fixed for Wednesday, the 8th of June.

THE SEWAGE OF TOWNS.

At the January meeting of the Hexham Farmer's Club, Mr. R. WALLIS, the Chairman, read a paper on this subject, in which he said: I have nothing of my own, or, indeed nothing new, to bring before you on this important subject; but, by drawing your attention to the matter I may induce some one better qualified than I am to investigate the subject. It is a subject which must before long be not only investigated, but action must be taken to remedy the existing evils of the present mode of sewage of towns. It is a subject which is exciting great interest in this town at the present time; but I may be allowed to say it is not on that account I have chosen to bring the matter before this club, though I must say there is no town which I am acquainted with that presents more advantages for efficient and profitable sewage operations. As the subject is *sub judice*, I will not allude to it any further. The chief reason for me presuming to bring the subject before you is the fact that agriculturists are really the persons most interested. To quote from the celebrated Mr. Mechi, who has done good service in this cause, both by his pen and by practical application—he says: "If the money value of the contents of the sewers could be shown to the British farmer in bright and glittering heaps of sovereigns, he would grasp at the enormous wealth, and make great efforts to attain it. Our sewage, although a less perceptible treasure, is not the less a real one. I am bound in truth to say that I have not seen any practical desire or effort on the part of the British agriculturist to obtain this treasure. If it is worth having it is worth asking for; but it has not been asked for; and the apathy and miscalculation on the subject must amaze every unprejudiced man of calculation. Is human excrement less valuable than that of animals?" The subject is, at the present time, receiving that attention it is entitled to from the various scientific bodies. A committee, appointed by the British Association, is now collecting evidence on this subject; it has been discussed at a meeting of the Social Science Association, and several articles have appeared in the leading scientific journals; and the Government have been induced to pass a Bill "For Facilitating the More Useful Application of Sewage;" but I am not aware the agricultural community have shown themselves to be at all alive in the matter. Whether we regard the question of the sewage of towns in relation to the health and comfort of the people, or the utilization of the sewage matters in relation to agriculture, it assumes an immense national importance. It is the difficulty of reconciling these two points which invest the subject with so much interest. Hygiene is undoubtedly the first consideration, but it has hitherto engrossed almost the entire attention of the different authorities constituted to carry out the question. Had the modes employed been successful for the purpose they were intended for, there might have been some excuse for the reckless and immense waste of the manurial products. But such is not the case. No one denies the desirability of cleansing our towns from the excreta of men and animals which are so prejudicial to health and comfort; nor does any one deny the value of the town sewage applied to agriculture; but no one is satisfied that either one or the other of these desiderata has been accomplished. Enormous sums of money have been spent in almost every town in England on sewage operations, and in very few instances indeed have they proved successful. In very few towns, even where favourably situated, has the utilisation of the sewage been taken into consideration. The object has always been to find an outlet for the sewage matter, at the least possible expense, into the nearest stream or navigable river. This has turned out to be a great mistake. The concentrated accumulation of sewage filth along the banks of the streams has been the cause of febrile diseases and premature death; it has poisoned and driven away the fishes; and in some instances the mud has given rise to serious obstruction to navigation. London is a notable example of this, and every town where the sewage is poured into the streams is the same in a minor degree. A few years ago, when the sewers of London opened into the upper part of the river Thames, the deposit of sewage

mud on the banks was perfectly intolerable; the exhalations were most noxious and deadly, and the whole system demanded an immediate remedy. Under the engineering skill of Mr. Bazalgette, an elaborate system of intercepting sewers was devised and carried out, to convey the sewage to a point several miles down the river, beyond the densely populated portion of London (to Barking and Crossness), at the cost of £4,250,000. And what has been the result? The result of a survey last year shows that, near the northern outfall, a space of more than 40 acres, and near the southern outfall, of about 120 acres of the bed of the river has been covered by a deposit varying in depth down to 7 feet. Mr. Letheby reports that "The deposit consists of sewage matter. It is evident from what I know of the usual composition of mud of rivers, that this is a very large proportion of organic matter; and that, by undergoing putrefactive decomposition, the mud may be a cause of considerable alarm, especially as it there meets with sea water, the sulphates of which may, by the chemical decomposition of the putrifying mud, occasion the escape of much sulphuretted hydrogen, and set up that remarkably offensive change, which is the characteristic of the action of sea water upon sewage." This is the result of his great scheme, and in proportion of every town in England where the sewage has the outfall into the river. This great scheme was carried out purely as a matter of hygiene, regardless of the valuable manurial elements; though it must be borne in mind that the removal of the sewage from the Thames altogether was contemplated. The Metropolitan Sewage and Essex Reclamation Company intended to carry the great outfalls of the sewers further down to the Maplin Sands, which were to be irrigated by the sewage, and turned into a vast plain of market gardens. But the Board of Works wished to drive too hard a bargain, and the company was nipped in the bud. The Sewage and Reclamation Company stuck fast at their experimental farm at Barking, of which I will speak hereafter. The irrigation of the Maplin Sands must either be carried out by the Board of Works, or by some company who ought to be guaranteed 3 or 4 per cent. It would be a great experiment, and, if successful, would be limited in different parts of the country. But if this be successful, there still remain in the sewers the pestiferous gases. Several modes have been tried to get rid of these gases:—1st, by the use of ventilating charcoal grates; 2nd, by ventilating through chimney shafts; 3rd, by ventilating through pipes to the tops of buildings; and 4th, by diluting the sewage with water. None of these modes have been satisfactory, and Mr. Bazalgette states, in a report on this subject, that it would cost for plant £460,000, and £301,480 annually, thoroughly to ventilate the London sewers. These sewer gases, being compounds of sulphuretted and carbonated hydrogen, are lighter than common air, therefore have a tendency to escape, and hardly any gully or water closet, however well trapped, is free from them; but when a strong wind blows into the outlets of the sewers, the back rush of the deadly gases is intolerable. The water closet system, however well they may be trapped, is open to great objection, and in small and tenemented houses, where the people neither will nor can understand the mechanism, they are an intolerable nuisance. The whole system of sewage is wretchedly bad, and recklessly extravagant. It carries the liquid and solid excreta down to our neighbours to rot at their doors, and it leaves us a legacy of deadly gases to remind us that our endeavours to cheat nature has signally failed. To remedy the defects of the present system, a return has been made in many towns, particularly in Manchester, to improved privies and ashpits, catch pits, hermetically sealed boxes, and earth closets. Earth closets may do very well for small agricultural towns and villages, but I fear they are impracticable for large towns. The earth requires to be kept very dry; and three and a half times more than the quantity of the excreta is required. Burnt clay and charcoal are the best deodorizers for the purpose. They absorb the moisture and gases of the excreta, and prevent any obnoxious smell; when earth closets

are well kept they are very effectual. For a town of 100,000 inhabitants, 3,500,000 cubic feet of dry earth would be required to be brought in, and 4,500,000 cubic feet would have to be carted out again, an amount of carriage which would be almost impossible without interfering very seriously with the regular traffic of the town. But the greatest novelty of invention for remedying the defects of the present system of sewage is that by pneumatic force. In a "Work on the Sewage Question by F. C. Krepp," the whole subject of sewage by different countries is most ably treated; and Mr. Krepp, in that work, gives a most detailed account of a system by Captain Liernur, "for the daily inoffensive removal of fecal solids, fluids and gases by pneumatic force, combined with an improved method of sewage utilization." The work was very ably reviewed in the *Newcastle Daily Journal* of the 22nd July. The plan seems to be a most feasible one. It seems perfect in theory, if it can only be carried into practice. If it can, wealth and honour will be the sure reward of the fortunate discoverer. This system of Captain Liernur's realises the motto, "Rainfall to the River, and Sewage to the Soil." No system of sewage is worthy of consideration which does not give back to the soil that which in our food we have taken from it; and I consider the mere ridding ourselves of a valuable fertiliser, simply on account of the difficulty of dealing with it, quite beneath the enlightened spirit of the age. The subject is of such great national importance that we should not rest until some plan is devised to render sewage matter innocuous to public health and profitable to agriculture. It has been decided by those who have given their attention to the subject. 1st. That town sewage cannot be profitably utilised by deposition, filtration, or precipitation, and that none of the methods hitherto adopted under this system have effectually accomplished the dis-pollution of the streams into which the effluent waters are discharged. 2nd. That town sewage when applied in irrigating land, by natural gravitation, has invariably realised profitable results; and that the waters discharged from such land, after irrigation, are so far deprived of their noxious constituents as to be rendered practically innocuous. 3rd. That when judiciously applied, liquid sewage does not give off offensive emanations, but is immediately deodorised. 4th. That the soils best fitted for sewage operations are sand and light loam, and well drained clay. 5th. That the crops most benefited by sewage irrigation are Italian and other grasses and root crops. 6th. That the fertilising properties of sewage matters depend entirely upon the liquid portion, the precipitation being almost useless. In liquid and solid excrements, before entering the sewer, the fertilising properties are $\frac{7}{8}$ fluid to the $\frac{1}{8}$ of the solid. Now to get some idea of the value of the sewage, we will take our town population at 25,000,000, and we will assume that the excrements passed by every individual is equal in value to 10s., which is a moderate calculation (it has been differently stated from 8s. 4d. to 14s.), this will give us the enormous sum of £12,500,000 per annum. There is no doubt about the facts. This is a fair approximation of the sum we are wasting every year, in polluting our streams, and destroying our health, simply for not having the means of profitably applying it. But Boards of Health and Corporations must learn to know that the successful application of sewage matter to the land does not necessarily mean an immediate profitable mercantile speculation, but as adding to the wealth of the nation in the increased value of the land, and enlarging its capability of producing food for the people. We hear of many failures in the application of sewage to the land, but these may safely be attributed to improper application. One positive fact is worth a hundred negatives; indeed, sewage cannot be otherwise than beneficial to the land if properly applied; it contains all the salts and minerals which have been taken from the soil, and must be returned to it again for successive crops. The irrigation of the Craigentney Meadows is the oldest and best known example of sewage irrigation. What was once a barren sand, is now worth a rental of £30 an acre, from which five and six crops of grass are cut every season. The Lodge Farm at Barking is another notable example. I have not been able to get the recent information I expected about this farm. But there, on a stiff clay, they get five crops of Italian rye grass every season; their root crops are something so enormous that I dare not venture to mention the weight without having my memory refreshed; strawberries and cabbages also produced very heavy crops at the Lodge Farm. In a paper read by the Earl of Essex, some

years ago, at the meeting of the British Association, he says, "There seems to be no limit to the quantity of sewage for grass land, provided the soil be porous and well drained. I cut my grass five times in a season, and my root crops are the largest I ever saw. One year I lost almost all my wurzel by the fly and drought. I transplanted five acres of wurzel, and turned the sewage upon it, that yielded 45 tons per acre; and kept 34 bullocks all the summer, with as much as they could eat, from seven acres. The liquid sewage sinks into the soil at once, and often becomes imperceptible in about half an hour, always within a day." About the year 1700, with a population approaching to 7,000,000, we annually exported 100,000 quarters of corn. Now, we import from 30 millions to 40 millions annually, and our population approaches 30 millions. We also import fertilizers to the amount of two millions sterling, which is equivalent to a tax upon corn. But we must recollect that the supply of these fertilizers is not inexhaustible. The supply of bones from Denmark, Russia, and South America, and of fossil excrements, and guano from Peru will cease, and then what will be the condition of the fields of England if we continue in our reckless course? In an old country, like this, you cannot have food without manure; therefore, with an increasing population, and a diminution of home grown products, you sap the very foundation of your country's greatness, and bring her to the verge of misery and destitution.

Mr. CATCHESIDE said that besides this question of sewage affecting their town it was one which ought to demand their attention both in a commercial and in a scientific point of view. As was observed by their chairman, the first question that they should have effectually settled respecting the sewage of towns was the fulfilment of hygiene strictly as a scientific principle. The proper drainage of towns and the thorough removal of sewage and all noxious gases of every kind should be first attended to. The great difficulties appeared to be, firstly, in the great waste of water necessary to flush the sewers, in order to carry away the sewage into the river; and, secondly, the pollution of the streams provided by nature for their good. He referred to the sediment left by sewage in the river at London, which was seven feet in depth, and if he might draw a comparison between our town and London he might venture to say that they would have no such depth in the river Tyne, because there was nothing near the same quantity of sewage going into the river. For those who advocated the dry earth system—the mixing of excrement with soil—this comparison might prove an important fact. In London they found the water system fail, with all the immense quantity of water with which the sewers were daily flushed to carry the sewage into the Thames. Taking this into consideration, and the mere nothing in the way of waste of water at Hexham, how could they apply to London the dry earth system, on account of the immense quantity of dry earth and ashes that would be required to be mixed with the sewage of London, when they found water the most plentiful in that way fail to effect the object, for it carried the sewage into the river and left it there, and did not thoroughly carry it away? Even supposing it were possible to adopt the dry earth closets, and farmers would buy it, where could they store up such an immense quantity of sewage which left seven feet thickness in the bed of the river? The dry earth system would prove itself impracticable in another sense—they would find that hygiene was not strictly carried out. Mr. Catcheside gave, as an illustration, Bellingham, which, he said, was in an abominable state, the air being impregnated with various noxious gases emanating from ash-pits, &c., the dry earth closets being in use at that place. It would never do to sacrifice the health of the townspeople to satisfy the wants of farmers in providing manure for them to buy. In Hexham he knew, for a positive fact, that all the sewage could not be sold if utilised; farmers did not want manure all the year round. Sewage naturally would have to be prepared all the year round, and he wanted to know where they would store it? Some of it must go to waste; it could not be used at certain times of the year; they had not land to put the sewage upon by irrigation. Certain individuals had refused to have it put upon their land, as it would come in the way of their agricultural programme. With respect to putting sewage upon land by irrigation near a town, or where people dwell, they would find that various gases emanated from those fields which were irrigated with it, and in certain winds they would get the benefit of those gases in quite as great a degree, if not greater, than when blown up the sewers. Water-closets

were acknowledged to be a great nuisance, but they must put up with them if they could not get a better system. The question was whether the water-closet was not more healthy than the dry-closet system? The latter might be applicable to small villages, where there was a sufficient demand to buy up the manure thus formed. As to the chemical constituents of sewage, by precipitation the liquid portion, by far the most valuable, was allowed to run to waste. In conclusion, he said this question had not seemingly acquired that importance which it deserved and ought to receive at the hands of scientific men, though no doubt some day they would get a solution of this very important problem. It was not only a problem which concerned the sanitary condition of towns, but was one which involved deliberate waste on the part of a great and enlightened nation.

Mr. SMITH said they would be well aware that there was considerable discussion going on in this town respecting the sewage question. He might say that the Hexham Local Board were carefully considering it, and no Board could be more anxious to carry out all the improvements they possibly could than they were. He was one of the members of the Board, and he was in favour of irrigating land with sewage by means of gravitation, and if they could get land at a reasonable rate in the neighbourhood they would find the sewage to be very profitable. The population of the town might be taken at 5,000, and if an income of £2,500 a-year could be derived from it, it would more than pay all their rates. Mr. Smith had no doubt but that the time would come when the utilization of the sewage of towns would become exceedingly valuable, and instanced the case of Edinburgh, where pure sand when irrigated with sewage yielded large crops. At Aldershot the application of sewage to poor clay land had

also been attended with the most successful results, and he had personally seen its astonishing effects in the neighbourhood of London. Mr. Smith concluded by proposing a vote of thanks to the chairman for his excellent paper.

Mr. H. STEPHENSON seconded the vote of thanks, and said he had no doubt when they had the paper printed, and time to think over it, they would see the utility of it. It was the business of the farmer to get his manures as easy as possible, and to produce the greatest crops.

The CHAIRMAN, in response, said he was glad to hear that Mr. Catchside coincided with his views that the earth-closet system would not do for large towns, and seemed to doubt even whether it would do for small villages. He wished to know what system was adopted at Bellingham, to which Mr. Catchside had referred. Was it merely the common privy?

Mr. CATCHSIDE: Just the common ash-pit privy.

The CHAIRMAN said there was an improved one, and it was that to which he had referred in his paper. The simple ash-pit privy was abominable. Mr. Catchside asked what they would do with sewage, as they could not irrigate land with it all the year round. He replied that undoubtedly they could; and he found that at one place where it had answered the purpose best, that from 50,000 to 60,000 gallons per acre were put upon the land every time a crop was taken off. No smell arose from it, and he supposed Mr. Catchside spoke from book and not from fact. The earth was the only effectual deodoriser, and they were distinctly told that within half-an-hour the smell disappeared, and always within a day. He felt much gratified to have a vote of thanks proposed to him, and he returned them his cordial thanks for the honour they had done him.

MR. HALL MAXWELL.

No one was more jealous of his own or his Society's dignity, and his eye would flash and the colour would mount to his cheek at a word. He delighted most in marshalling statistics and annexing districts at his desk, but still he was supremely happy in the show-yard. Everything was done there with great dignity and order, and the Scottish bench would sometimes chaff their coadjutors from England overnight, and tell them that Hall Maxwell never admitted a judge into the show-yard unless he presented himself in full court-dress. On the opening morning he might be found in the pay-box for a few minutes, helping to gather the crowns, and exchanging a word or a nod with each member as he came in; but he soon retired, and for the rest of the week the saddle was his throne. He would be galloping here, there, and everywhere, as field-marshal, on his bay cob, setting lords, baronets, and lairds to work as "attending members" to the different sets of judges; and he was a plainish speaker, sometimes, if things did not go just to his mind. In short, both there and at Albyn Place, he was quite the autocrat of the Society; but, although they somewhat felt the bondage, they were very proud of him, and quite content to set off the marvels he had wrought for them against what many thought, and some termed "dictation." If any of the latter were unduly captious, he caught them without more ado and made directors of them, and they soon ceased from troubling. This mode of bland absorption was very transparent, but was never known to fail. Public business often took him to London, and no one could take charge of a Parliamentary bill better. If he appeared in a Committee-room to support or oppose on behalf of the Society, it was with such a well-marshalled and serried mass of facts and witnesses that it was always odds on him. At Battersea and Paris he was quite in his element, looking after Scottish interests. When in '61 he led the hundred-and-twenty herdsmen and shepherds to Battersea-fields, he lodged them in Edginton tents, and furnished them with beds borrowed expressly from the Tower. They had regular night-watches like soldiers; certain detachments of them made holiday at the Exhibition or the Crystal Palace, and on Sunday they were marched to Westminster Abbey. This was the only time that we ever saw him in complete sympathy with the stock classes. He seemed to care nothing about the very finest show of animals or their points, and to merely regard them as necessary links in his system. Neither

Belville, nor old Charlotte, nor Colly Hill, nor London Tam, "that very Blair Athole among Clydesdales," had made any impression on him. He only wished to see the classes worthily filled; the cracks he left to his friend, Mr. Gourlay Steel, "to be translated." As a private companion none could exceed him, and to us his stories were all the more salient, when they turned on his recollections of his own Society. He loved to recount the Parisian speculations and observations of "Boghall, who did him such yeoman service as cattle manager on that famous international trip; and he unconsciously gave us a delightful specimen of his best official manner in his recital of "Duncan's Arrest at Perth." It seems that the late Duke of Athole, who was then president of the Society, went to Mr. Duncan the night before the show opened at Perth and demanded a stock catalogue. With answering fidelity to his chief, who had given express orders to the contrary, Mr. Duncan expressly declined to hand over, and the Duke (whose Highland blood was very easily roused) ordered him forthwith into a cab, and taking his seat beside him, drove straight off to Mr. Maxwell's inn. The latter was summoned from dinner, and on going into the lobby, heard the indictment which the Duke delivered with immense emphasis, holding the accused by the collar. Then Mr. Maxwell struck in, appealing to the Duke as one who had been in the army, and knew the value of rigid discipline, and showing his Grace that "my orders are only your orders—even a president cannot break his own rules;" and so the upshot of it was that the Duke doffed his bonnet, and made a most gracious bow—"Mr. Duncan, I humbly beg your pardon." Such was Hall Maxwell; and Scotland did not let one who had served her so well and so long retire without a substantial reward. On January 17, 1886, he was presented with 1,000 gu. and a handsome service of plate, and was also requested by the directors of the Society to sit to Mr. Gourlay Steel, for his portrait. They little thought how soon that portrait (which is hung, among the few that have attained such honour, in their council chamber) would be all they could look upon. He was still in the very prime of his mental vigour; and, if health had been granted to him, he might have reasonably looked forward to another twenty years of usefulness in his country.—From The Druid's new work, *Saddles and Stirrups*. [Can any of our readers favour us with a copy of "Investigator's" pamphlet, the point of which was an attack on Mr. Maxwell?]

THE WELSH MODEL AGREEMENT.

TO THE EDITOR OF THE MARK-LANE EXPRESS.

SIR,—In your impression of the 17th Jan. you publish a form of agreement or lease adopted by Lord Lisburne, drawn, as his agent states, for the *protection* of the “improving tenant”! It is a very lengthy and peculiar document. On reading it I thought of the nursery rhyme, “Taffy was a Welshman, Taffy was a ***” if all this be needed to keep a Welsh tenant honest and improving! I read it twice, but, I fear, missed the improving part. The third time pays for all, I said, and I read it the third time; but my bacolic mind became somewhat obfuscated with the interminable lessee, lessor, executors, administrators, assigns, &c., &c.; and if the Welsh “bacolic mind” be anything like the English, I fancy it will not be improved in this fashion. There are some things no fellow can understand as improving any one but the landlord. Fancy a landlord reserving the right to make plantations anywhere on a farm, “the tenant not being allowed to destroy game, wild-fowl, or rabbits, *but to use his utmost endeavour to preserve them*; tenant at own cost to paint with two good coats of oil paint, every three years, all wood and iron work;” tenant at his own cost to insure and keep insured all buildings, &c.; to crop according to rule; not to sell off any roots, hay, straw, &c.; to repair all gates, fences, roads, bridges, &c.! Not a word about materials, found; not a word about allowance for cake or corn consumed, nor for artificial manures used. If the tenant absent himself for two months, though it may be for the *improvement* of his health, he is to be improved off the farm! Lastly, he is to pay all the costs and expenses of these presents (and a pretty present too), *and of the counter or duplicate*. Why not say at once, “Dance as I bid you, and pay the piper”? In order that our Welsh friends may have some idea of a liberal agreement I enclose a copy of Lord Harrowby’s, read by him at a meeting of the Staffordshire Chamber of Agriculture, which you will perhaps publish.

Yours truly,

Eford Park, Jan. 26.

GEO. A. MAY.

The buildings, gates, and premises shall be kept in repair by the said tenant (damage by fire or tempest excepted, for repairs consequent upon which all carting shall be done by the said tenant) being allowed for that purpose the necessary timber in the rough, bricks, stone, and tiles or slate; and if the said tenant shall neglect to do any such repairs for the space of twenty days after having received notice in writing from the said landlord or his agent of the need thereof, the said landlord shall be at liberty to cause such repairs to be done, and may recover the tenant’s share of the cost thereof from the said tenant as and for rent in arrear. The woodwork of the inside of the house shall be painted once in every ten years, and the outside of the house and such parts of the buildings as have usually before been painted once in every five years with two coats of good oil paint; the other outside woodwork of the farm buildings not painted shall be gas-tarred once in every ten years, the cost of such painting and gas-tarring to be borne equally by the said landlord and tenant. Any draining required, and sanctioned by the landlord, will be done by the said landlord, the said tenant carting the pipes necessary for that purpose, and paying an additional rent of 5 per cent. per annum on the cost thereof. All hedges, fences, watercourses, ditches, and drains shall be kept in good order, and all thistles, docks, and other noxious weeds on the lands, hedgerows, and adjoining roads cut so as to prevent their seeding by the said tenant, or may be done by the said landlord, and the cost recovered as above stipulated for repairs. All rates, parliamentary, parochial, or otherwise, chargeable upon the said farm

shall be paid by the said tenant, tithes, land tax, landlord’s property tax, and insurance upon buildings excepted. All hay, straw, potatoes, roots, cabbages, and other food for cattle grown upon the said farm shall be consumed thereon, or if sold, one-half of the proceeds of such sales shall, within six months after any such sales, be expended in manure approved by the landlord or his agent, to be applied either to green crops or to the pasture land, the other half in oilcake or linseed to be given to cattle or sheep; all manures, whether made from the produce of the farm or purchased in exchange for such produce sold, shall be used upon the said farm, or in the last year of the tenancy left for the benefit of the succeeding tenant. Notice shall be given by the said tenant to the said landlord or his agent previous to any such sale of hay, straw, or other produce, and vouchers shall be produced for the manure or oilcake brought instead thereof. If any hay or straw be destroyed or damaged by fire, the value thereof shall be expended in the purchase of other hay and straw, or in manures and oilcake in the same manner as if such hay and straw had been sold. The meadow and pasture land shall be manured after every alternate mowing, with not less than ten loads per acre of rotten dung, or fifteen of long manure or good compost, or an equivalent in ground bones or other manure approved by the said landlord or his agent. The arable land shall be kept during the tenancy under this agreement in a clean and good state and condition, and so cropped that at the expiration thereof the arable land shall be in the following condition, or the said tenant shall pay to or be paid by the said landlord for any deviation therefrom such sum as the arbitrators appointed as hereinafter mentioned shall determine. One-half of the arable land shall, on such expiration of tenancy, be clean and in good condition and fit to plant with white fallow crops; of such half part, one moiety shall have been sown (with green crops) during the previous summer, the other moiety thereof shall have been wholly under clover or mixed grass seeds, or part in clover and the rest beans or peas after being manured, none of the clover or other grasses having been allowed to stand for seed. One-fourth of the arable land shall have been sown in the spring of the year preceding the termination of the tenancy with clover or other proper mixed grass seeds upon land fallowed the previous year and clean, the seeds, sowing, and harrowing to be paid for by the said landlord or his in-coming tenant, provided they have not been grazed after harvest. Not more than one-fourth of the arable land shall require to be fallowed in the year after the termination of the tenancy, nor require an outlay of more than fifty shillings per acre to clean it; if it require less than that sum the said landlord or his in-coming tenant shall pay the difference, if more than that sum the said tenant shall pay it. And it is hereby agreed that not later than one month before the termination of the tenancy under this agreement the said tenant and the said landlord or his in-coming tenant shall each appoint an arbitrator; these arbitrators shall meet not later than ten days before the expiration of the tenancy, and having appointed an umpire, shall proceed to consider the claims made by either party; in case either party refuse or neglect to appoint an arbitrator, the other may nominate an umpire, who shall have the same powers as if he had been appointed by the arbitrators jointly, and any award made in pursuance of this agreement shall be final and binding upon both parties, and may be made a rule of any superior court of law; the terms “clean and in good condition” and the construction of all covenants and stipulations herein used, shall be understood in a reasonable and practical sense, and the claims contingent thereupon treated accordingly. The arbitrators shall first consider how far the state of the farm differs, if at all, from that herein stipulated, and they shall decide whether the said tenant or the said landlord or his in-coming tenant is entitled to any and what compensation on account of such variation; they shall then settle the other claims between the parties upon the following basis: The said landlord or his in-coming tenant shall pay after the rate of fifty shillings per acre for all land in excess of one-half which, under the above conditions, is fit to be planted with white straw crops, or shall be paid by

the said tenant at the same rate for all short of one-half of the arable land so fit. Not less than one-fourth of the clover or mixed grass seeds shall be mown for hay during the last year for the use of, and to be paid for by, the in-coming tenant; for the remainder of the land whereon clover or other grasses have been grazed the whole summer by sheep the in-coming tenant shall pay after the rate of forty shillings per acre, provided such land be clean, and that only one crop of corn has been taken since the previous fallow. The said tenant shall be entitled to the sum of fifty shillings per acre for all clean fallows. If not clean and ready to plant with corn, the cost of making them so must be deducted. If the said tenant has not sold hay, straw, or roots, and has purchased manure within the last two years of the tenancy, or if he has purchased manures in excess of the quantity required to replace the hay and other produce so sold, he shall be paid one-half the cost of all such purchased manures in excess of the quantity so required which shall have been applied to green crops or grass land in the last year of the tenancy, and one-fourth of the cost of that in the last year but one, such cost not having exceeded forty shillings per acre. All unprepared bones and lime used upon any part of the farm during the last four years of the tenancy shall be paid for, deducting one-fourth for every year's use, and on pasture land during the last six years, deducting one-sixth for every year's use, provided such pasture land has not been mown in that time, and for every other fertiliser of a permanent nature, such allowance as the arbitrators may determine, and also one-half of the cost of all oilcake or linseed consumed during the last year, and one-fourth of that in the last year but one, provided such oilcake or linseed has been given to cattle and sheep, not horses. The said tenant shall not retain any part of the buildings or land after the termination of his tenancy (except the use of the barns for thrashing and winnowing only), but shall be paid the value of all growing green crops, and of all hay or straw remaining on the premises. The arbitrators shall fix the times for thrashing and delivering such straw to the in-coming tenant. The said tenant shall be paid such sum as the arbitrators may determine for all permanent improvements made with the sanction in writing of the said landlord or his agent. In case this tenancy shall determine by bankruptcy or assignment, or deed of arrangement, or composition with, or for the benefit of creditors, the arbitration clause shall apply, and the time for nomination of arbitrators shall be one month after such determination, and the arbitrators or arbitrator shall have full power to adjudicate on all questions of compensation, having regard to the time when the tenancy so determined, and the assignees or trustees shall stand in the place of the tenant.

THE WELSH LIBERAL AGREEMENT.

SIR,—I can picture to myself the astonishment and indignation of Lord Lisburne and his agent at the unexpected treatment which their liberal agreement has received at the hands of "plain practical" *Lincota*, and also in your editorial criticisms. Their ill-advised attempt to teach the landed proprietors and land agents of England in general, and of Wales in particular, how to construct a "liberal" yearly agreement, has exposed them to well-merited ridicule, and shows that they have yet to learn the rudiments of agricultural politics. For my part, I look upon it as an endeavour to foist upon the public as *original*, what looks very much like a patched, and slightly altered form of a Scotch lease, as I can lay my hands on one constructed more than half a century ago which bears a very striking resemblance to Lord Lisburne's "new lease."

I have always thought that yearly agreements, and even leases for a term of years, should be as simple and condensed as possible, but it would appear that Lord Lisburne and his agent think that in a multitude of words there is wisdom. The lengthy preamble, in the first instance, has a strong savour of the legal gentleman pervading it, than which nothing is more obnoxious to the feelings, or more pernicious to the welfare of the tenant-farmer. The different clauses of the lease are also over-burdened

with words, while they lack common sense and discrimination. The tillage clauses, for instance, imply that "the practice of good husbandry" forbids the disposal of hay, straw, and roots, otherwise than by consumption on the farm where they are grown. But this does not necessarily follow, as the most of the hay, straw, and roots are sold on some of the best farms which have come under my observation, and the fertility of the land is increasing instead of decreasing. This may be a puzzle to our would-be instructors, Lord Lisburne and his agent, but I will enlighten them as to the process should they be sceptical. It seems to me to be the very opposite of liberality that a tenant may not have the liberty to sell hay, straw, or roots, to the amount of £50 or £100, if he invest a similar sum in the purchase of artificial feeding-stuffs, or fertilizers.

But liberality to the tenant culminates in clause 8. I should like to know how the first part of that clause can be reconciled to the following reservation contained in the indenture. I will quote the sentence entire: "Except and reserved out of this demise, unto the said Earl and his assigns, all such parts of the said farm on which any timber or underwood is growing, with power at any time to plant trees, and to enclose or make plantations on any part of the said farm." And yet in clause 8 the tenant is bound to preserve "all trees hereafter to be planted, from all injury by cattle, or sheep, or otherwise." Would Lord Lisburne throw the burden of keeping up the plantation fences on the shoulders of the farmer? If not, what does clause 8 mean? The concluding part of clause 8, in a cool and summary manner, makes the tenant, in effect, the landlord's game-keeper. Notwithstanding all that has been said lately about the policy and justice of allowing farmers to destroy rabbits as vermin, Lord Lisburne takes a retrograde step, and deliberately orders his tenants by not merely asking them, but binding them to preserve rabbits, to destroy the fruits of their legitimate toil!

"Are all thy conquests, glories, triumphs, spoils
Shrunk to this little measure?"

One more point I am desirous of being enlightened on, and that is the difference between "the spending price" and the selling price of hay, straw, and roots. If Lord Lisburne's agent would kindly state a fixed rule for the purpose of determining this question, he would lay the public under an obligation to him.

Lord Lisburne's "new lease"—his agent's nostrum for the cure of bad farming in the Principality—turned out to public view, and inspected on every side, is a lamentable exhibition. I trust that it will be contemptuously rejected and condemned by the farmers of Wales. I am, your obedient servant,

Jan. 27.

A WELSH FARMER.

ANOTHER MODEL AGREEMENT.

SIR,—*Timeo Danaos et dona ferentes*, which being translated bucolically may be rendered, "I fear the landlord's agent even when offering an agreement professedly in the interest of the tenant."

Surely, sir, Mr. Gardener cannot expect anybody to accept his agreement as one which will secure to the tenant all that he is entitled to, or preserve him from the influence of the landlord. Many of your agricultural readers I have no doubt will remark to you upon various points connected with the farming clauses of this agreement; but I should like to call attention particularly to the fact that, although the tenant is nominally entitled to compensation, yet the protection is but small, considering that he can be turned out at the end of any year, at six month's notice, and that even if fully paid for all im-

provements, it will be a heavy loss, and great discouragement to him to remove—for, say, voting against his landlord's wish. This agreement appears to be drawn with view to preserve the landlord's territorial influence.

With respect to the schedule of allowances, and the clauses in the agreement relating thereto, I conceive that they are "a mockery, a delusion, and a snare," inasmuch as everything except the liming and seeds is so hampered by the agent's certificate, as, in case of offence given by the tenant, to put him at a tremendous disadvantage. It is very common with railway and other companies when entering into contracts for the making of lines, &c., to insert a clause that everything is to be certified by their engineer, and the effect of this is well-known: unless the contractor keeps well in with the engineer, he may be entirely refused his certificate—and he has practically no remedy. So it may be in this case. A tenant would be entirely at the mercy of the agent, who, of course, would only act as the landlord wished him.

I am, sir, yours obediently,

A TENANT-FARMER AND AN ATTORNEY.

Manchester, Jan. 22.

ANOTHER AGREEMENT.

DEAR SIR,—Circumstances have arisen that make it necessary there should be a fresh agreement between the owner of my farm and myself; and though the farm in question is very near Wales, we think the "Welsh Agreement" hardly suited to our case. We have, therefore, drawn up the following agreement, but before we sign it I shall be glad to have the opinion of your correspondents upon it.

As I am liable to be turned out at two years' notice, it has not been thought necessary to put in stringent clauses as to the mode of farming; as, of course, the owner can get rid of me if I farm badly, and is protected after I have notice to quit.

Yours faithfully,

BORDERER.

By this agreement, made on the — of —, A.D. 1870, between A. B., of —, and C. D., of —, A. B. agrees to let, and C. D. agrees to take, the farm called —, now in his occupation, with the house, buildings, garden, and cottages thereon, and the shooting of the woods, for two years, from the 25th of March next, and thence until two years' notice to quit at Lady Day shall have been given by A. B. to C. D., or six months' notice shall have been given by C. D. to A. B., at the annual rent of £—, payable quarterly, and a further sum of £10 for every acre of old pasture converted into tillage by C. D., and at the same rate for smaller quantities. And it is further agreed that after notice to quit, as above mentioned, shall have been given by either party, all the hay, straw, and green crops, and all the roots grown on the farm, except three acres of potatoes in a year, shall be consumed thereon; and not more than half the tillage sown with white corn crop in a year, and that no timber or fruit trees shall be cut down or injured by C. D., and that on quitting he shall have all the outgoing crop of wheat, not exceeding one-fourth of the tillage, and may take away all buildings hereafter erected by him, and iron fencing erected by him. A. B. undertakes to keep in repair the house and buildings; and C. D. undertakes to keep in repair all gates, stiles, and fences, on being found timber in the rough.

A. B. undertakes to pay C. D. when he leaves the farm for all purchased manures used for green crops during the last year of his tenancy, and half the cost of all oilcake consumed on the farm, and the cost of all clover and grass seeds sown the last year.

THE "WELSH AGREEMENT."

SIR.—Now that so much has been said about the "Welsh Agreement," I have to crave your permission to say a few words in reply to some of the criticisms thereon, which have lately appeared in your columns. There is always a sufficiency of the currency called "abuse" in circulation, and to any amount of such I offer no objection, but I will take the liberty of drawing your attention to one or two of your observations, which savour of "unfairness," and are altogether aside from your usual impartiality; in referring to the agreement, you say it is "a document in writing, of which the agent of the property proudly (?) says, 'I shall be very glad if I have suggested anything that may lead to a more liberal construction of agreements in general.'" Whereas in my letter to the editor of *The Welshman*, from which you quote, I say, "I shall be very glad, if in venturing on these few observations on a very important subject, I have suggested anything that may lead, &c.," evidently referring to the observations in my letter, and not the Agreement, as the sentence in the mutilated form you give it would imply. Again, you say, "He is evidently proud of his handiwork, and openly offers it as an example to the Principality and the criticism of others further a-field." The remarks of the editor of *The Welshman* will satisfactorily dispose of that imputation, and, along with my letter to him, show that what alone induced the consent to publish the agreement was the wish to have discussed various clauses which had been introduced into it, containing a guarantee on the part of the landlord to repay to the tenant, at the termination of his tenancy, the amount of his outlay (or a proportion of it) on improvements of a permanent nature; such clauses being quite unusual in yearly agreements in the Principality, and they will, notwithstanding all that has been said against the agreement, be found important to the tenants for whom they are intended. A "Welsh Farmer" seems to have been mightily afraid that an attempt was being made to "teach landlords and land agents." It may perhaps tend to soothe his ruffled dignity when I assure him such an idea was never entertained. I am none the less glad, however, to find their honour as zealously guarded by a "Farmer," although I admit he makes a "muddle of the thing" when a little farther on he talks of "our would-be instructors."

After all, I doubt, it will generally be found that agreements must be constructed to meet the state of matters in the different districts to which they apply. You can hardly ignore what actually exists, and deal altogether speculatively, with an "advanced state of things," which, however desirable, has yet no foundation in fact. An agreement, for instance, may be well adapted to the advanced state of agriculture in Lincoln, Stafford, and other counties, but at the same time totally inapplicable to the greater part of Cardiganshire; and it is perfectly easy, perhaps quite natural, for gentlemen living in these favoured localities to sit down and stigmatise as needlessly stringent the clauses of an agreement which deals with an entirely different state of things from those with which they are surrounded, and of the actual nature of which, it would appear from their remarks, they have but a faint conception—equally easy is it to denounce as "antiquated" and "uncalled for at the present time" clauses which have to deal, somewhat minutely it might be, with evils which cannot be reached in any other way. It is admitted that the "beginner should try to cultivate his land on some established principle of good husbandry," and it must be equally desirable that those at a later stage should do so. What, then, has the agreement in question to deal with? With an advanced state of agriculture? With scientific farmers? men of capital and skill, cultivating their lands in the best manner? who manure and clean them thoroughly, and sow them down in good condition, with clean seeds? cut their weeds, and keep their fences and premises in fair order? with men, in fact, who have learned to manage their farms "according to some recognized principle of good husbandry," and who expend large sums annually in the purchase of supplemental manures and feeding stuffs? In the majority of cases, most distinctly so. Doubtless we have some worthy exceptions, where the best management prevails; but, strange as it may appear, the neighbour on the other side of the hedge to such will be found twenty years behind; and all in a great measure owing to that absurd jealousy of what is considered an "at-

tempt to teach" (fairly exemplified in a "Welsh Farmer's" letter), which makes them stick like barnacles to their old customs.

Stripped of all fictitious covering, what are the actual facts with which we are confronted and forced to deal? Tenants with, in too many cases, an insufficiency of capital, and a disposition to remain *in statu quo*; over-cropping a prevailing sin; green crops and fallows generally "half-manured" and worse cleaned, followed by two and not unfrequently three white straw crops, with the last of which is sown, not well cleaned seeds, but more generally stuff collected from the barns and hay lofts, and the condition of the land thus laid to grass may be imagined, though that and the consequent evils to the tenant cannot be so easily described; add to all this a neglect to cut weeds, repair fences or gates, or clean ditches, and you have a picture not very flattering, certainly, or indicative of the "advanced state of the times"—but none the less true. How then can such evils be dealt with, unless they are adverted to in the agreement? and if the clauses should be thought too minute by those unacquainted with the circumstances which render them necessary, they cannot, unless proved to be at variance with the requirements of good cultivation, act as a hindrance to the efforts of a good tenant, while they may be a check on the reprehensible habits of a bad one. Now, many of the evils of the system I have mentioned, prevail on estates where there have been very few changes with occupation of the land during the last twenty or thirty years, to unsettle the minds of tenants, and "nip in the bud" any desire they might have to improve and keep pace with the "times." On the contrary, any tenant who kept within the limits of decency, and paid his rent, might feel comparatively safe from being disturbed. Some may say the time has gone by when men who will not manage their farms properly can be allowed to hold them; let the land to men of intelligence, skill, and capital; give them sufficient security, and hamper them by no unnecessary restrictions as to cropping, &c. Well, when such is done, by all means let it be so; but, on the other hand, few will question the humanity, if not the policy, of giving the present occupiers a chance of gradually making up lost ground, even though it should necessitate the retention in the agreement of a few clauses which might otherwise be considered "antiquated."

As to the clause providing for the consumption on the premises of all hay, straw, and roots grown on the farm, if it is seen that a tenant is managing his farm liberally, the permission to sell is never withheld, should a fair return in some shape be made to the farm; but it is quite imperative to have this clause to prevent an "unprincipled" tenant who contemplates leaving, or gets "notice" from impoverishing the farm; and this remark applies equally to the clause limiting the extent of grass lands to be cut or mown, when, as is sometimes the case, an outgoing tenant will sell off as much of his stock as he can, and cut the grass lands with a view to mulct the incoming tenant.

You seem to object to a tenant being required to have the sanction of his landlord before executing any drainage, fencing, or other works of permanent improvement, the cost, whereof,

or a proportion, the landlord becomes liable to repay the tenant in the event of quitting. This, I think, no reasonable tenant will object to. It cannot be expected that a landlord will put himself without restriction into the hands of his tenant, who may, by a very injudicious expenditure on works of that description (which may or may not be actually requisite), involve him to a very serious extent. If a landlord is to be liable to pay, he ought certainly to be a consenting party to the expense. A landlord requires the tenant's consent before draining a field for him, and charging him 5 per cent. on the outlay. Why should the rule not work both ways? As to limiting and the general management of the farm, there is no provision for the landlord's consent being first required, or, indeed, required at all. Mr. May cannot see why a landlord reserves the right to "plant any part of the farm." When I say that this refers generally to high exposed land where planting would in all cases be a "blessing," and when the poorest and most exposed parts are selected and compensation given, the clause will not appear very formidable; while "planting" is in all cases first done by the proprietor; the cost of the agreement is restricted to the price of the stamp, in most cases only a few shillings. To another of Mr. May's objections of "cropping according to rule," I will merely say that if the course of cropping to which his agreement has reference was suited to the locality, there could be no earthly objection on the landlord's part to adopt his tillage clause; but if the tenant under a yearly agreement with such a clause did not adhere pretty closely to "rule," he must make up his mind to "pay the piper" rather sharply in quitting. Allowances for artificial manures, feeding stuffs, &c., when rendered necessary by the tenant's management, can be introduced into an agreement without any stretch of liberality on the landlord's part.

One word to a "Welsh Farmer." He is puzzled with Clause 8, yet it is very simple: "the landlord puts up and keeps in repair all plantation fences;" yet the tenant is bound to protect trees, &c., from all damage, with his cognizance, either by the trespass of stock, or the cutting or destroying by servants or others. The "spending" price of any article of fodder is just the "consuming" price, or the value which a farmer considers a quantity of hay, straw, or roots to be to him when used on his farm, and which can be easily arrived at by any practical arbitrator.

Although game, including rabbits, are "reserved," it is not by any means intended that tenants should suffer by their depredations; and, where found advisable or necessary, permission to destroy will be given by special agreement. The permission to farmers to kill rabbits on their farms will do them little good, unless they are well kept down in the covert.

Apologising for the length of my remarks, I have the honour to be, sir, your obedient servant,

Wenall House, Feb. 10.

ROBT. GARDINER.

[We certainly understood that Mr. Gardiner's letter to *The Welshman* was intended as a kind of running commentary on the agreement, as published in the same number; but we are glad now to gather that it is not intended to very minutely observe or enforce some of the very curious clauses of that very curious document.—Ed. M.L.E.]

THE CENTRAL CHAMBER OF AGRICULTURE.

A meeting of the council of the Central Chamber of Agriculture was held on Tuesday, Feb. 8, at the Salisbury Hotel, Colonel Tomline, M.P., in the chair.

A recommendation from the auditors that a Finance Committee should be appointed was acted on, and Mr. Smythies, Mr. Willson, and Mr. Neild were chosen to form such committee.

The twenty-six members of the council were appointed the Business Committee, with power to add to their number.

Sir MASSEY LOPES, as chairman of the Local Taxation Committee, presented its report. It said—

The Local Taxation Committee report that at their last meeting, held December 7th, they appointed Sir Massey Lopes, Bart., M.P., Mr. Albert Pell, M.P., Mr. Arthur Startin, and Mr. B. H. Masfen, adjudicators of the prize of £50 for the best essay "On the Injustice, Inequalities,

and Anomalies of the present Poor Rate Assessment, and of the Incidence of other Local Burdens of England and Wales." The essays, sixteen in number, having been placed in their hands, these gentlemen unanimously awarded the prize to the essay bearing the following motto: "This is not the cause of faction, or of party, or of any individual, but the common interest of every man in Britain" (Junius), which proved to have been written by Mr. C. F. Gardner, B.A., of 10, St. Michael's Terrace, Stoke Damerel, Devonport. The adjudicators have ventured to express their satisfaction with the very great merit and ability displayed in several of the remaining essays. The committee are making arrangements for the immediate publication of the successful essay. The essay will be published at the lowest possible wholesale price by Messrs. Bentley, of Fleet-street, price 15s. per hundred. It is proposed to

present a copy to every member of the Legislature. The committee recommend that the provincial Chambers of Agriculture should circulate copies in every parish within their respective counties. All those who feel interested in this most important question could greatly aid the efforts of the committee by purchasing and distributing copies of the essay amongst the ratepayers in their immediate neighbourhood. The committee recommend that Mr. H. Masfen, Mr. Arthur Starin, and Captain Craigie be added to the executive committee. They also strongly urge that the Chambers of Agriculture which have not already appointed any gentleman to represent them on the Local Taxation Committee should do so at the earliest opportunity. The committee have prepared a form of petition, which they propose to forward to every provincial Chamber of Agriculture, trusting that the members of those chambers will use their utmost exertions to obtain as great a number of signatures as possible. They further recommend that the petitions should be forwarded by each chamber to its local members of Parliament for presentation. The following are the clauses of the petition:

That the direct tax of over eleven millions per annum under the name of "poor-rate" bears exclusively and unjust on income arising from real property.

That the exemption from the poor-rate assessment of income arising from personal property is not only unjust, but also impolitic, and prejudicial to the public interest, and therefore requires the serious consideration of Parliament.

That the poor-rate and its mode of assessment, by costly and frequently incorrect valuations, discourages investments of capital in improvements, and thereby impedes industry and enterprise.

That the tax has an injurious bearing on house property in every city, town, and village, presses heavily on investing in buildings, especially on investments in improved dwellings for the working-classes, and limits the demand for the labour of skilled and unskilled artisans employed in the planning, ornamenting, and building of houses.

That indirectly this tax increases pauperism, lessens the employment of labour in the production of food, and thus inflicts a two-fold injury on the poor, who are especially interested in the increase of food and the increase of employment.

That investments of capital in improvements, tending to increase of food, to increase of dwellings for the poor, to increase of employment in skilled and unskilled labour, should not be discouraged by a special tax (averaging over 11 per cent.) on income arising from such investments.

That the general tendency of recent legislation having placed the management of poor and county rates under boards and auditors, controlled by a central power, has removed the objection that the maintenance of the poor and highways is a local duty, and therefore should be paid by a local tax.

That the majority of county and borough voters are ratepayers, but not generally large money owners, and are therefore deeply interested in the removal of the present exemption from poor-rate of income arising from money however invested or employed.

That the re-adjustment of local taxation is a question entirely removed from the domain of party politics, and is strenuously advocated by persons of any shade of political opinion.

The Committee will, it was added, be prepared at their next monthly meeting in March (having then been in existence twelve months) to present a statement of their accounts; but as they will have exhausted their funds at their disposal by the payment of the prize essay, with the publication and distribution of the prize essay, they feel that a large increase of their funds is absolutely necessary for carrying on their work with vigour and success.

A donation of £50 was voted on account of the prize essay. Some new members having been elected,

The CHAIRMAN said there seemed to be great difference of opinion as to whether farmers' horses employed in drawing a load of shingle, or any other material for the repair of roads, were or were not chargeable with licence duty. The decision rested with the surveyors of taxes, who, as they all knew, were almost certain to decide against the farmers; and at the meeting of the Business Committee on the previous evening it was proposed that either a deputation should wait upon the Chancellor of the Exchequer on the subject, or a question should be put to him in the House of Commons. He believed that in some cases where a farmer had fifteen or twenty horses, the whole were charged with duty unless it were

shown that one of them was specially used in drawing materials for repairing the roads. It was clear that that could not have been intended by the Legislature.

The Chairman was requested to put a question on the subject in the House of Commons.

The CHAIRMAN said: The next thing on the agenda was a proposal that a deputation should be sent to the Chancellor of the Exchequer, to ask him whether free trade was to be applied to the Englishman as regarded the malt-tax?

Mr. C. S. READ, M.P., said: He would move that a deputation wait upon the Right Hon. gentleman, if possible, directly after the Council meeting in March, adding, that unless it went before the budget was proposed, there could be little chance of success.

Sir G. JENKINSON, M.P., seconded the motion.

Mr. HODGKIN thought, that unless there were a large surplus this year, there was but small hope of their being more fortunate than they were on previous occasions.

Mr. NEILD trusted that there would be no faint-heartedness in the matter. The time had come when agriculture must be unhackled, and set free at home, and the malt-tax, like many other imposts, showed the injustice inflicted on farmers in their race with the rest of the agricultural world. Mr. Cobden once said, that if the county members were united in urging the necessity of the abolition of the malt-duty it would soon be abolished.

It was then resolved, that a deputation be organised at the meeting in March, to wait upon the Minister.

The meeting next proceeded to consider the subject specially appointed for discussion, viz., "The best mode of providing for the future maintenance of turnpike trusts and highways."

Mr. JARREY TURNER (Peterborough Chamber) introduced the following resolutions: 1. "That as hardship and injustice have been inflicted upon many parishes by the partial abolition of turnpike trusts, and as the policy of continuing some trusts by annual legislation is temporising and unsatisfactory, this council is of opinion that all turnpike trusts should be abolished simultaneously, and that the maintenance of all public roads should be settled on a permanent and equitable system." 2. "That, as the interests of the whole community have been promoted by the existence of the improved means of traffic and intercommunication, and as much of the expenditure in the formation of turnpike roads was incurred to facilitate the mail service, to provide for the transport of troops and military stores, and for other imperial purposes, it would be unjust to charge the remaining debts upon rateable property only; and that these debts ought to be liquidated by the national exchequer." 3. "That, as it would be unjust to transfer the burden of future maintenance of the turnpike or trunk roads of the kingdom from the present users of these roads to the owners and occupiers of rateable property, this council considers indispensable either a revision of the rating system, so as to bring under contribution the general wealth of the districts through which the roads pass, or the alternative of part payment of the road expenditure out of the imperial revenue." After remarking that these resolutions were almost identical with some which had been passed by this Chamber, he cited a resolution of the Norman-Cross Highway Board in his own district, passed in reply to a circular from the Secretary of State, asking for the opinion of such bodies, to the effect that the new system had given great dissatisfaction to the ratepayers generally on account of the additional cost, which had not been counterbalanced by the advantages; the board also, recommending a return to the system established by the Act of 1835. He added that he would then confine himself to moving the first of his three resolutions.

Mr. CALDECOTT (Rugby) seconded the resolution.

Colonel WILSON (Suffolk) said a board in the western division of his county had after six and a-half years' trial sent a reply to the Government circular, expressing its unanimous approval of the Highway Act. When that Act was first introduced the ratepayers in that district were by no means satisfied, fearing that it would lead to great additional expenditure, but it was now generally approved. He believed that nearly all turnpike trusts would come to a natural death unless they were kept alive by the Turnpike Continuance Act; and if he were right in assuming that the money was lent for so many years with the expectation that it would be repaid at the end of that time, the people who lent it had no more claim

upon any one in case of failure than a person would have upon the Stock Exchange if he made what turned out to be a bad investment. As regarded the maintenance of roads in future, it was suggested that the cost should be borne partly by the Government. They all knew that the incidence of taxation was now unjust; but he would caution the Chamber against anything which would increase the present array of Government inspectors. There were inspectors already for almost everything, except highways, and let them keep clear of them if possible in that case. In his opinion the best arrangement would be for each parish to maintain its own roads.

Mr. JANCEY (Herefordshire) doubted whether an increase of area would conduce to good management; but until there was a readjustment of local taxation they had a right to ask the Government and the public to pay something towards the maintenance of roads.

Mr. GENGÉ ANDREWS hoped the Council would never assent to the principle that it would be fair and just to repudiate turnpike debts. No doubt the lenders of the money thought at the time that it would be as secure as money in the Funds, and he deprecated that repudiation which had disgraced other countries.

Col. WILSON said he should be the last person to suggest repudiation, but he wished to know what was the legal status of the holders of the debts.

Sir G. JENKINSON, M.P., said he had drawn up an amendment, which he believed embraced the pith of all the resolutions submitted to the meeting. His view in proposing it was not to weaken any recommendation of the Council, but rather to induce it to look the facts in the face, and not to ask for anything which was sure not to be granted, and the asking for which would tend to stamp them as not being men of business. Any attempt to reimpose turnpikes where they had been abolished must be perfectly futile; they might as well attempt to reimpose protection. The amendment which he had to propose was as follows:

"That in the opinion of this Central Chamber of Agriculture the question of the future maintenance of turnpike roads and highways is mixed up with, and dependent upon the larger question of the re-adjustment of local taxation. But subject to this proviso: This Chamber considers that the injustice and hardship inflicted on various parishes by the system now in force of the partial abolition of trusts, and by the expense of the maintenance of the turnpike-roads of the trusts so abolished, being borne by the parishes only through which such turnpike-roads pass should be put an end to without delay. To effect this it is expedient that the Legislature should enact: 1, That the abolition of all remaining trusts should be immediate and simultaneous. 2, That the Highway Act should be made general and compulsory. 3, That the area of liability for the expenses of maintaining turnpike-roads and highways should be spread over all the parishes included within each highway district as a common charge, according to the rateable value of each parish."

As regarded his proposal, that the Highway Act should be made general and compulsory, he believed that the evils which were complained of arose chiefly from the permissive character of the Act, and that what he proposed pointed to the hardships of the existing system, and would supply a remedy.

Mr. GENGÉ ANDREWS had great pleasure in seconding the amendment, because in providing for the maintenance of roads it expanded the area of rating. He thought that unless they could insure that the area of rating should be extended to personal as well as real property they would make a great mistake if they consented to the abolition of tolls.

Mr. WESTOVER (Banbury) objected to the Highway Act being made compulsory.

Mr. R. N. GREVILLE, M.P., believed there was great difference of opinion with regard to the working of the Highway Act. He lived in the middle of a county which was one of the first to adopt it, and there the roads were now generally better and almost invariably more expensive.

Mr. KNATCHBULL-HUGHESSEY, M.P., must say that, occupying as he did a very subordinate position in the Government, it must not be supposed that he was able greatly to influence or affect its policy. He appeared there, not as a representative of the Government, but rather as one who, being a landowner and a land occupier to a considerable extent himself, was desirous of obtaining rather than giving informa-

tion on a subject which was interesting to them all. He would frankly state that one of the reasons why he was present was, that a mistake had crept into the newspapers which he was anxious to correct—namely, that that question was to be brought before the House of Commons during the present session. A promise was, indeed, given to that effect; but unfortunately the present Government had, like previous ones, promised to do more than could be accomplished; and although he had urged strongly upon the Government the importance of that question, he found that it was necessary to postpone a measure which he had hoped to propose at once. There was to be an announcement in the Queen's Speech that day—he hoped he should not be charged with betraying secrets because he referred to it—which bore upon the solution of that and other questions affecting the agricultural community. It would be announced that day that the question of rating was to be considered, and a measure proposed relating thereto; and he need not remind those who had studied the matter so long, so anxiously, and so zealously, as many gentlemen present had done, that the question of rating was, like one or two other questions, inseparably mixed up with that before the meeting. Now, upon the question under discussion he wished to speak with the utmost frankness. He hoped it would be clearly understood that in anything he might say as to the best solution, he was expressing only his individual opinion, and that if the result should not precisely correspond with what he sketched out, neither he nor his colleagues would be afterwards accused of having given a "pledge that was not borne out by the event. The first resolution before the meeting declared "that all turnpike trusts should be abolished simultaneously." He must say that he was a little staggered at that proposition. No doubt the simultaneous abolition of all turnpike trusts would in some respects be advantageous; but, considering the different positions of those trusts—that some were heavily in debt and others almost out of debt; that some were steadily paying, and others had no hope of paying—it was evident that any measure which simultaneously abolished all trusts, or dealt with all on the same footing, would inflict even greater hardships than it would remove. As regarded what had been said in that discussion about the bondholders, no doubt the speaker was logically right. Logically, it was evident that if a person put his money on a terminable security he had no right to expect that when the time arrived for payment of the principal he would be placed in so favourable a position as if he were entitled to a renewal of the term. That principle was part of the common law of the land. As a simple, dry matter of fact the bondholder in the case in question had no legal claim whatever. What constituted the peculiarity of the case was that Parliament had from time to time renewed the Acts, and that such renewal for periods of 10, 20, or 30 years, had created a species of confidence that could not otherwise have existed. It would, therefore, he thought, be rather hard to deal with the parties concerned as though no expectations of renewal had been excited. Some persons might contend that the deficiency in this case should be met out of imperial resources. He did not think any Government or Chancellor of the Exchequer could propose such a measure with any hope of success. In the first place, it might be said, and said truly, that considerable hardship would thus be inflicted on that large body of bondholders who had, from one cause or another, already consented to receive a much smaller amount than they were entitled to—that it would be very hard upon them for Government to step in and pay the debts of others after they had lost so much. Take his own case. He had been a bondholder. In one case he had regularly received the interest, and a portion of the principal had been paid off; in another he had been obliged to abandon his claim, and had got nothing; and in another, again, he received thirty per cent. in full satisfaction of the debt, and was glad to get it. He should have thought it rather hard if, for the benefit of other persons who held no better security, his own Parliament had stepped in and settled the debts—debts that remained. Therefore he thought that in any settlement which might be proposed relating to that matter the allocation of the debts would be found exceedingly difficult. Without pledging himself as regarded any future action, he wished to show how exceedingly difficult it would be to work out a question of that kind, especially how difficult it would

le to apply imperial taxation in the settlement of it. If the experience of those who had dealt with such subjects militated against the idea that any Government would propose what he had mentioned, surely it would be wise for them to dismiss such an idea from their minds, and not clog the discussion, as he perceived some chambers had done, with a resolution declaring it to be necessary that the Government should deal with this matter by means of imperial taxation. Now, with regard to turnpike trusts, there had been one mistake made that morning, which should, he thought, be corrected. A gentleman remarked that all the trusts were kept on by the Continuance Bills. That was by no means the case. About half the turnpike trusts had already been removed, and others were being removed from time to time, as circumstances seemed to require. He quite admitted that hardships were being inflicted. A great many of the remaining trusts were going, however, year from year, their term not having expired, and it was difficult to deal with some of them, except by putting a financial pressure upon them, which would be hardly fair. All this showed how complicated the subject was, and that it would not be so easy to abolish all turnpike trusts simultaneously, as some gentlemen appeared to suppose. He now came to the highways. Many gentlemen present might be aware that he had for years dealt with that subject as an independent member of Parliament, and had introduced two bills relating to it. He did not now tie himself, as it were to those bills; but he thought he might congratulate himself that they had awakened the country to a sense of the importance of the question. The country had now become alive to the fact that the question must be settled, and it was for them to bring their influence to bear upon it in such a wise and discreet manner that it would be settled satisfactorily to the agricultural community. His object had been to labour until he had obtained a uniform system of road management throughout the kingdom. It was absurd to have a number of miles of road over which there rode two surveyors amenable to different authorities, and two systems running side by side which inflicted a considerable burden on the country. Then came this difficulty, in the solution of which, however, would be found the ultimate solution of the whole question, namely, that turnpike roads did not stand in relation to the general traffic of the country as they used to do, that was to say, as being the main arteries of traffic, but that, partly from the interruption of railways and partly from other causes, turnpike roads and highways had become so intermixed that many highways were more used than turnpikes; whilst with regard to turnpikes there were many that were now no more than an inferior description of highways. The resolution justly said that these roads were made for the interest of the whole community. But a distinction must, nevertheless, be drawn between those roads which were great arteries and those which were not, because there were throughout England a vast number of turnpikes which might become highways to-morrow, and it was quite possible and probable that there were some turnpikes, the maintenance of which ought not to be borne by the parish. What was wanted, then, was to decide the difference between the two, and some power to authorise, if necessary, a different payment for the support of the one from that which was made for the support of the other. The best solution was this: that as a general rule all highway districts should support all the roads within those districts, and that all the charges of a highway district, such district being well considered and defined, should be borne by a common and not a parochial fund. Then there should be a power to take out of the category of roads to be maintained by the district such roads as from circumstances ought fairly to be chargeable upon a wider area. By this he meant roads which were the main roads of the county—say, roads from one town to another, which it was evident the county ratepayers should be called upon to maintain; and another class of roads which lay near mineral districts, the heavy traffic of which cut up and made the roads very expensive, whilst the owners of the mines contributed a very small proportion towards their repair, although they were the means of doing the greater part of the mischief. His idea was, moreover, that the person who should determine what roads were to be taken out of the category of roads to be supported by the district should not be a stranger or Government inspector, but a person in some sort connected with the county (Hear, hear). This naturally

brought him to the question of county financial boards, and he believed that the Bill he introduced last session on this subject contained the germs of the settlement of that question; and that if they had, in those who managed the finances of the county, a board which commanded the confidence of the ratepayers, not composed of one class alone, but partly of *ex-officio* members and partly of practical men of all classes in the community, they would have formed a board as a superior referee, who would be able to decide satisfactorily what roads in the county ought to be thrown on the district and what on the larger area. They might also vest a controlling power in the Secretary of State to determine whether the roads named by the board should be supported out of the county rate; whether they were so national in their character as to constitute a fair demand upon the national purse for some portion of their maintenance; or whether there might not be some exceptional instances where, the roads being situated in a mineral country, it would not be necessary to keep up the old turnpikes and secure their maintenance by the persons who used them. But the broad principle was to divide the roads in some such way as he had indicated, taking those which were not really other than highways and supporting them by the districts; and taking the others which were proved to be out of that category and charging them upon a wider area. With regard to highway districts, that was a question upon which he was able to speak with some authority. The circular issued last autumn which had been referred to the himself had drawn up and was responsible for, although it had the sanction of the Home Secretary. It had been sent to the clerks of all highway boards, and the answers he had received to its inquiries enabled him to form an opinion as to the working of the Highway Act. Speaking of that Act, he had always entertained the opinion that permissive legislation was not likely to be satisfactory; that it was the duty of the Legislature, as the representatives of the people, to ascertain and decide what subjects required to be legislated upon, what the character of the legislation should be; and when the two Houses of Parliament had passed a law, and it had received the Queen's assent, it should be obeyed by the community. And his experience of the Highway Act had only confirmed his opinion, that permissive legislation was open to the gravest objections. When he sent out the circular referred to, he certainly expected to find that a preponderance of complaints would have come from the highway boards; but it turned out to be no such thing, for out of the 340 highway boards constituted, 178, or more than one-half of the whole, returned answers to the effect that the Act had worked satisfactorily to the ratepayers; that the roads were improved; that in some places there had been a diminution in the charge; and where it had increased, that increase had been far more than counterbalanced by the advantages of having good roads. With respect to the minority, about one-third of them had not returned any answers to the circular. Some of the remainder had replied to the effect that their boards had not been formed long enough to enable them to give an opinion; whilst only eighty had returned unfavourable answers. Out of that eighty, however, a very large proportion, more than one-half, had considerably qualified their answers. Some admitted that the roads were greatly improved, though they thought the expense too heavy; but they hoped that it was in course of diminution. Others, again, found fault with the surveyor of the district; but, after all, a good deal of the disapproval expressed might be traced to the fact that the Highway Act was a permissive not a compulsory measure. These figures proved, he thought, that the Act could be worked well, that it was a good and useful Act, and that, however unpopular it might be in certain districts, the matter would never be set right until, having rendered it more palatable to the minority who dissented from it, it was made compulsory over the whole country. The answers of many of the highway boards had contained very valuable information, and he should be glad if any gentlemen connected with those boards would convey to them his thanks and those of the deputation with which he was connected. The resolutions suggested many other observations, but he had given the Chamber his general ideas on the subject, and he could assure them that upon all the points on which he had touched it would be the desire of the Government to consult the wishes of the agricultural community, which must obviously be the class who knew more about the practical working of the matter than any one else (Hear, hear). He

could not then go into the question of rating, or pronounce an opinion respecting it in his present position. In fact, he spoke with his hands tied. Still he would deal with them with the utmost frankness; and if they would keep out of view those plans and projects which were not likely to be taken up by the Government, and confined themselves to that which was practical and sensible, he had no doubt a solution might be obtained which would be generally satisfactory. As to the debt, it had been reduced to a little over £3,000,000 at the close of the year 1868, and there was no doubt it was still slowly being further reduced. A great deal of it, however, it was hopeless to expect to reduce; but that question of the debt must be fairly tackled before they could deal with the whole question. If by getting rid of all turnpike roads they could reduce the expense to the ratepayers, although apparently increased by the charge for the reduced debt and repairs, they would do great good. That, however, would depend very much upon the identity of tollpayers and ratepayers, and it had been proved to demonstration before the Committees of the House of Commons that in many instances tollpayers and ratepayers were much the same people. In conclusion, the right hon. gentleman reiterated his desire and that of the Government to settle the question in a manner as satisfactory as possible to the farmers; for if satisfactory to them it must be so to the Government.

Mr. CORRANCE, M.P., was sure he was only expressing the feelings of all present when he said they were deeply indebted to the right hon. gentleman for his frank and unreserved exposition of his views on that subject.

Sir GEORGE JENKINSON, M.P., must confess that the arguments of the right hon. gentleman did not appear to him to support all his conclusions. He had spoken of the debts as the great obstacle to a settlement of the question, but he (Sir G. Jenkinson) did not see what those debts had to do with the question of the future maintenance of roads. The right hon. gentleman said they should aim at establishing a uniform system. He accepted his proposition. But what was the uniform system under their notice? It was that of the highway districts, which he believed stood condemned ("No, no," and "Yes"). The right hon. gentleman had obtained from the Boards satisfactory testimony to their own efficiency, but it appeared from the returns that the expense, instead of having diminished as was expected, had increased; while in 18 counties from which he had seen the returns, there was only one—Northumberland—in which the cost of maintenance was not larger in the third year than in the second.

Mr. C. S. READ, M.P., said that after the full, cordial, and he must say most satisfactory explanation of the right hon. gentleman, he would appeal to Sir George Jenkinson to withdraw his amendment, in order that the Council might pass a resolution to the effect that, until they had seen the Government Bill with regard to rating, the subject had better be postponed.

Sir MASSEY LOPES, M.P., thought they would be unanimous in thanking Mr. Knatchbull-Hugessen for attending the meeting, and so ably explaining his views. He should also have risen at once to move an amendment like that just suggested, but that he thought it might be considered desirable that the deputed members of Chambers should have an opportunity of representing their opinions on the question. He was very much gratified by the announcement the Government were going to deal with the subject of local taxation, and he agreed with the right hon. gentleman that the question before the meeting was part and parcel of that much larger question. He would now move, "It is the opinion of this Chamber the present system of turnpike tolls, it would be inexpedient and impolitic at present to adopt or recommend in lieu thereof any proposal which may in any degree tend to increase the expenses of our so-called local burdens, until the Government have announced their promised scheme for dealing more comprehensively with the whole incidence of this important subject."

Sir G. JENKINSON, M.P., said, that in anticipation of what had just been said, he had been prepared to withdraw his amendment, and to substitute for it the following: "That after the statement made by Mr. Knatchbull-Hugessen, this Chamber considers it expedient to wait for the re-adjustment of local taxation before passing any measure having reference to the future maintenance of turnpike roads and high-

ways." He thought that would exactly meet the view expressed by Mr. Read.

The Hon. Baronet then withdrew his amendment, and that of Sir Massey Lopes, M.P., which took its place, was seconded by Mr. Neild.

Mr. Jabez TURNER said, as the proposer of the original resolutions, he thought he should best promote the object which he had in view by withdrawing them.

The original resolutions were accordingly withdrawn.

Mr. GEORGE ANDREWS contended that as all persons were benefited by good road communications, the whole community ought to contribute towards their maintenance.

Mr. WHITAKER (Worcestershire) spoke of the dissatisfaction with the working of the Highway Act in that county.

Mr. SMYTH (Hertfordshire) said the effect of the Act in his district had been to double the rate and create great animosity. Among the ex-officio members of the highway board were the landlord, the brewer, the banker, and even the coal merchant. If the question of local taxation were satisfactorily settled, all the difficulties with regard to roads would vanish.

Mr. G. F. MUNTZ (Birmingham) supported the amendment. The amendment of Sir M. Lopes was then passed unanimously.

Sir M. LOPES observed that he thought it would be desirable to discuss the question again after they had learnt what was the Government measure with regard to local taxation.

Mr. GEORGE ANDREWS said though he was glad to hear the right hon. gentleman's announcement, he could not join in the clapping of hands which followed it. He should like to see what the Government measure was before he clapped his hands.

Mr. KNATCHBULL-HUGESSEN said in order that there might be no mistake, he wished to repeat that he spoke as a private individual and not as a member of the Government. What he said was that he had heard that the question of rating was about to be dealt with by the Government and that a measure was prepared, but that, not being a Cabinet minister, he had not seen the details, and therefore gentlemen must not be disappointed if it fell short of what they hoped for.

The following resolution was proposed by the business committee: "That agricultural returns, as at present collected, are unreliable and unsatisfactory; that it is desirable for such returns to be made once in ten years; and that they should then be compulsory."

Mr. CHARLTON (North of England Chamber) read a resolution of that Chamber, declaring that agricultural statistics would be very valuable for agricultural and national purposes, provided they were fair and reliable; but that as at present collected they were useless, and were employed for individual injury.

Mr. D. LONG said he was inclined to move as an amendment "That the only advantage of the collection of agricultural statistics would be to keep down the price of agricultural produce by importations from abroad when there is a deficiency at home, and such collection consequently would be not only most inquisitorial, but unjust and prejudicial to the interests of agriculturists." Statistics collected every ten years would not be open to the objection thus described, because farmers would not be continually interfered with, and they might be of advantage without the drawback of their being used for improper purposes.

Mr. NEILD thought the day was come when England must keep pace with other countries, and have true and regular accounts of its agricultural products. It was not agricultural statistics, but the mismanagement of them that had led the merchants of this country to import double the quantity of corn this year that they should have done. As to the proposal to collect statistics every ten years, that was simply a polite way of burking the whole question. He had intended to propose the substitution of ten for three years; but in deference to Mr. Read, whom he was always happy to follow, he would propose that the period should be five years.

Capt. CRAIGIE seconded the amendment.

Mr. C. S. READ, M.P., said it appeared to him utterly senseless to suppose that the simple publication of the fact that a few thousand acres more or less were under cultivation, would affect importations to any extent, or regulate the transactions of their merchants. It was the yield, and not the number of acres sown, that showed what was grown. He did

not think agricultural statistics did either the harm or the good that many persons in that Chamber seemed to think.

Mr. A. PELL, M.P., observed that the returns which many persons had been so anxious to obtain were not placed in the hands of the merchants until their orders had been given, and the corn was on its way to this country. Imperfect and useless as they were, however, they cost £16,000 a-year, and therefore, even in the economical point of view, a quinquennial, and still more a decennial, collection would involve a great saving of the public money. What was wanted was information which would show whether or not England was changing the character of its cultivation; whether it were becoming more of a grass-growing or a corn-growing country, and whether as regarded the production of meal it was able to rely upon its internal, and was less dependent on foreign resources. Such statistics the nation might fairly demand at their hands.

Mr. WEBB thought five years preferable to ten.

Mr. JAMES TURNER remarked that the uselessness of the present system was evident, from the fact that 14,000,000 quarters of wheat were imported last year when only 8,000,000 were required.

Mr. H. WOODWARD ridiculed the idea that statistics, collected only once in ten years, could be of any use, adding that no one could expect to see them more than five or six times in his life.

Mr. SMYTHIES thought the real ground of complaint was

the permissive character of the present system, and remarked that if statistics were collected only every 10 years, farmers would have forgotten what they had learnt (laughter).

On the question being put, the amendment substituting "5" for "10" years was rejected, and the latter figure was then adopted by a large majority.

Mr. SMYTHIES proposed another amendment to the effect that the collection be annual and compulsory.

Mr. YOUNGMAN seconded the amendment.

Mr. NIELD expressed a wish to have it declared, that agricultural returns as at present collected, are unreliable and unsatisfactory, and that they should be made annual and compulsory.

The CHAIRMAN said he desired to understand what was the question to be submitted. Was it meant to declare that agricultural returns, as at present collected, are unreliable and unsatisfactory; and that, therefore, they should be made compulsory?

After some conversation, the amendment was put from the chair in the following form: "That agricultural returns be annual and compulsory?" Seven hands were held up for this amendment, and 11 against it. The original resolution was then put, and, to the no little surprise of many persons in the meeting, negatived by a majority of one!

A vote of thanks was given to the Chairman, and the meeting then separated.

THE PROGRESS OF THE SESSION.

Speaking last week to the opening business of the Agricultural Session, we said "the more important of these meetings would seem to have been already held, as nothing very particular would promise to come of the discussion at the Farmers' Club, and as nothing very particular does ever come of the deliberations of the Central Chamber of Agriculture." It must be admitted, however, that any such anticipations have not been altogether realized. The question of breaking up grass land had so often already been under the consideration of the Farmers' Club, that it was doubtful whether the same subject would be found to command much further attention. The result was certainly something of an agreeable surprise. Those who have the opportunity of referring to the occasions on which this matter had previously been discussed by the Club will find that it was never so well handled. Mr. Cadle's hurried delivery was rather against him, and no doubt his address will tell better to the eye than it did to the ear; for it is a carefully prepared, well-balanced, and eminently practical paper, while the debate which followed was one of the best, in the way of close and sound criticism, that has happened here for some time. It embraced in a very felicitous degree all the advantages of a comparison, as each succeeding speaker might be said to represent a certain district or system of his own; and we would only repeat that the report which we give in full may be studied with equal benefit by those who were absent as by those who "assisted" at the proceedings. According to our contemporary *The Gardener's Chronicle*, "Mr. Cadle read a capital paper, which was listened to throughout with the greatest attention by a large agricultural audience, and an interesting discussion ensued." We might, perhaps, be inclined to put more value on the discussion than is here quite inferred, for with the exception of one speaker, who told the Club to "turn over a new leaf" in the selection of its subjects, and who was very happily corrected by the Chairman, there was not a member but who spoke with effect.

But we must hold more strongly to our line when declaring that "nothing very particular does ever come of the deliberations of the Central Chamber of Agriculture,"

for, as it really seems, scarcely anything came of the meeting on Tuesday. There were two especial questions under discussion, the one turning on turnpikes and highways and the other on the collection of agricultural statistics, and on neither was any conclusion whatever arrived at! This sounds strangely, too, for the local Chambers have been passing their opinions on the highways until they have fairly tired of passing any more; as, if there be anything on which the Central Chamber particularly prides itself, it must be its resolutions, and even here resolutions were as plentiful as blackberries. Thus Mr. Jabez Turner moved the following formidable series, that we give more as a curiosity than anything else: "That as hardship and injustice have been inflicted upon many parishes by the partial abolition of turnpike trusts, and as the policy of continuing some trusts by annual legislation is temporising and unsatisfactory, this council is of opinion that all turnpike trusts should be abolished simultaneously, and that the maintenance of all public roads should be settled on a permanent and equitable system." 2. "That, as the interests of the whole community have been promoted by the existence of the improved means of traffic and intercommunication, and as much of the expenditure in the formation of turnpike roads was incurred to facilitate the mail service, to provide for the transport of troops and military stores, and for other imperial purposes, it would be unjust to charge the remaining debts upon rateable property only; and that these debts ought to be liquidated by the national exchequer." 3. "That, as it would be unjust to transfer the burden of future maintenance of the turnpike or trunk roads of the kingdom from the present users of these roads to the owners and occupiers of rateable property, this council considers indispensable either a revision of the rating system, so as to bring under contribution the general wealth of the districts through which the roads pass, or the alternative of part payment of the road expenditure out of the imperial revenue." And, next, of course, Sir George Jenkinson moved as an amendment another neat little thing in this way: "That in the opinion of this Central Chamber of

Agriculture the question of the future maintenance of turnpike roads and highways is mixed up with, and dependent upon the larger question of the re-adjustment of local taxation. But subject to this proviso: This Chamber considers that the injustice and hardship inflicted on various parishes by the system now in force of the partial abolition of trusts, and by the expense of the maintenance of the turnpike-roads of the trusts so abolished being borne by the parishes only through which such turnpike-roads pass, should be put an end to without delay. To effect this it is expedient that the Legislature should enact: 1, That the abolition of all remaining trusts should be immediate and simultaneous. 2, That the Highway Act should be made general and compulsory. 3, That the area of liability for the expenses of maintaining turnpike-roads and highways should be spread over all the parishes included within each highway district as a common charge, according to the rateable value of each parish." And, then the meeting, after weighty deliberation, resolved to reject alike the original series and the second series of motions, and to express no opinion whatever! This energetic determination was said to be due to the presence of Mr. Knatchbull Huggessen, who was very careful to have it understood that he did not come there as a representative of the Government, and that he did not mean to say what the Government was going to do. Personally, he objected, moreover, to the point of the Council's own series of resolutions; and so he was loudly cheered, "the meeting was deeply indebted to him for his unreserved exposition, his full and cordial explanation," and so forth; although it certainly does seem to us, as it struck Mr. Genge Andrews, that before they begin to holla they should have some notion of what they are hollaoing about.

Thus having so satisfactorily disposed of one subject, having brought all the influence of the Central and local chambers to bear upon the Government in the arrangement of its measures by doing and proposing to do nothing whatever, the meeting proceeded to deal as determinedly with the second question before it. The Business Committee, taking its cue from Mr. Sewall Read, declared "That agricultural returns, as at present collected, are unreliable and unsatisfactory; that it is desirable for such returns to be made once in ten years; and that they should then be compulsory." Whereupon, Mr. D. Long moved as an amendment "That the only advantage of the collection of agricultural statistics would be to keep down the price of agricultural produce by importations from abroad when there is a deficiency at home, and such collection consequently would be not only most inquisitorial, but unjust and prejudicial to the interests of agriculturists." Mr. Smythies moved for *free* instead of *ten* years in the original motion, and then that "Agricultural returns be annual and compulsory." The first, or Mr. Long's amendment, would appear never to have been put, although duly seconded; the proposition of five for ten years was rejected by a large majority; that for annual and compulsory returns was lost by 11 to 7; and the original motion was also lost by one vote! The consequence of this, as our reporter explains in a note, is that nothing whatever was carried, "to the no little surprise of many persons in the room." When the Government becomes naturally anxious to know what that influential body the Central Chamber of Agriculture would recommend as to the Amendment of the Highway Acts the answer is, "We would rather leave it with you for the present;" or, as Sir George Jenkinson said at Gloucester, Mr. Huggessen looking to the stand made by the Central Chamber may report that "not a single suggestion has been offered." And when the Government, again, would wish to ascertain whether the experiment of collecting agricultural statistics should be continued the Central Chamber

has really nothing to say about such a matter one way or the other. Mr. Sewall Read may say elsewhere as much as he likes about his ten years' plan, of course but another notion of "this day six months," but he must always bear in mind when doing so that this proposal has been condemned by the Central Chamber.

Was there ever such a shilly-shally, timid, trimming, much-ado-about-nothing business as this? Let any man read through the report of the proceedings and see how much he can make for himself out of it. The Queen's Speech says: "Bills have been prepared for extending the incidence of rating, and for placing the collection of the large sums locally raised for various purposes on a simple and uniform footing; for the amendment of the laws which regulate the grant of licences for the sale of fermented and spirituous liquors; and for facilitating the transfer of land;" while two or three Game Bills have already been introduced. And what is the Chamber of Agriculture going to do? The Chairman is to put a question as to the duty on cart horses, that he most probably never will put; a deputation is to put a question as to the repeal of the Malt Tax, and a petition for the re-adjustment of local taxation is actually to be presented, as well as a prize essay to be published. An admirable production, no doubt, this is, although the point of the report would go to sending round the hat again, "the Committee has exhausted its funds," and more money is "absolutely necessary." Here, in touting for more money, we are quite ready to allow the immense energy displayed by the executive of the Central Chamber.

And in all this we fail to see, as we have failed to see, any especial advantage arising from the offices of the Central Chamber of Agriculture. It may tend to serve the purposes of some few people, and make the world more familiar with the powers of honourable gentlemen of the calibre of Sir George Jenkinson, Mr. Pell, and Mr. Corrance. But to what end is the thing working? What good is it doing? What action is it taking? Are we to turn to the report of last Tuesday's proceedings as the answer? On the day following there was a dinner of the Peterborough Chamber, at which Mr. Attenborough was called on to propose the Central Chamber, and he did so after this fashion: "We had heard a good deal about the Central Chamber, but he did not think much about their doings on the previous day." Precisely so. We have heard a great deal about the Central Chamber, as everybody must have heard, but we do not think much of its doings. Mr. Attenborough is evidently a gentleman of a very nice observation.—*Mark Lane Express*.

MR. WYKEHAM MARTIN'S GAME LAWS AMENDMENT BILL.—The following are the chief clauses of this Bill: From and after the twenty-fifth day of September one thousand eight hundred and seventy it shall be lawful for any tenant, or any person employed by him, and having his authority or permission, to kill rabbits on the lands occupied by him, any agreement or covenant to the contrary notwithstanding; and any agreement reserving the sole or exclusive right to kill rabbits shall be null and void. Any person who shall kill any rabbits in pursuance of this Act shall not thereby become liable to pay any assessed taxes, nor shall he be bound to take out any licence under the Act passed in the twenty-third and twenty-fourth years of the reign of Her most Excellent Majesty, chapter ninety. The provisions of this Act shall not apply to any lands held under any lease which was originally granted for a term of years not less than five, during the term or currency of such lease.

THE CENTRAL FARMERS' CLUB.

GRASS LAND.

The first monthly meeting of the Farmers' Club in the present year took place on Monday evening, Feb. 7, at the Club Rooms in the Salisbury Hotel, the Chairman of the year, Mr. J. HOWARD, M.P., presiding, the attendance being a full average. The question fixed for consideration was "Grass land—when to be profitably broken up, and when more profitably kept in pasture," the introducer being Mr. CLEMENT CADLE, of Gloucester.

The CHAIRMAN said: Gentlemen,—I think I may very fairly congratulate the Club upon the importance of the subjects which have been selected for discussion during the coming year. Not only are the subjects important in themselves, but the names appended to them are those of men who are well known and who will, the Club may rest assured, handle the topics entrusted to them in a masterly manner. The subject to be introduced this evening is "Grass land—when to be profitably broken up, and when more profitably kept in pasture." Most of the gentlemen present are aware that Mr. Cadle has already won his spurs on this question, having received the first prize for the best essay on the management of grass lands from the Royal Agricultural Society of England (cheers). I am quite sure that if he can tell the members of this Club, and the farmers of England, how, with wheat at 5s. a bushel, they can turn any portion of their farms, or the landlords of England can turn any portion of their estates, to better purpose in increasing the supply of meat for the millions of our population, he will confer very great benefit upon the community at large (Hear, hear). You will have observed, gentlemen, that the month of May has been left vacant in the card. That is not because subjects for May have not been proffered for discussion. Several have been proffered, and I may state that no less important a man than Professor Voelcker has very kindly offered to read a paper; but, seeing that a very important question is to be introduced in another place which deeply affects the interests of agriculture—namely, the question of the education of the rural population, combined with that of the education of the whole country, it has been thought desirable that we should leave a month open for the discussion of any measure of that kind which may be brought before Parliament; and hence it is that you see a blank space in the cards for the month of May (Hear, hear). Without making any further remarks, I will call on Mr. Cadle to introduce his paper (cheers).

Mr. CADLE said: Mr. Chairman and Gentlemen,—At a discussion in this room some twelve or fourteen months ago, resulting from Mr. Mechi's paper on the undeveloped power of British agriculture, I heard some rather conflicting opinions expressed by members of this club as to the desirability of converting grass land into tillage, and as in the present day every thing that tends to the increase of farm produce is entitled to consideration, I thought a discussion on the subject would be very desirable, especially as the subject has not been brought before the Club for fifteen years, when Mr. J. Wood, of Ockley, Sussex, introduced "The expediency of converting grass land into tillage." The result of that meeting was that the following resolution was adopted, viz., "That this Club is of opinion that grass land of fair quality will be found most profitable in that state, but that inferior pastures would yield more profit to the occupier, a greater rent to the landowner, and more food to the community, if converted into tillage." Mr. Wood, by very

elaborate figures, showed the profits in arable over those of grass to be £1 18s. 9d. an acre per annum, and said that cattle may be profitably kept under cover; and in the course of the discussion Mr. Paine drew the line at 25s. per acre rent, under which value land might be profitably converted to tillage. In 1847 the subject was also before your Club, when it was introduced by Mr. Shaw, jun.; and the chairman, the late Mr. Fisher Hobbs, in opening the meeting, amongst other remarks, said, "Amongst practical men there can, I think, be but one opinion of the importance of the subject. Those gentlemen who live in arable districts will agree with me that in travelling throughout the country we cannot but feel surprised at the vast extent of grass lands we see, in comparison with the arable land. The greater portion of the grass land of this kingdom is moreover very badly managed. One-third of those grass lands are of decidedly inferior quality, and might be advantageously broken up and converted into arable land, thereby employing more than double the number of labourers producing more stock—that is to say, more beef and mutton—and at the same time go through its rotation in growing green crops." Mr. Shaw brought forward some very conclusive arguments in his paper, followed by a good discussion, in which the late Mr. Hudson stated that he had a good deal of experience, and that *such land broken up would produce more beef and mutton in two years than it would as pasture in four*. Mr. Turner also stated that he had broken up land that had produced more of the necessities of life in three years than it had previously in twenty as pasture land. The following resolution was arrived at: "That it is the opinion of this meeting that a large portion of the inferior grass land of this country might be broken up and brought into cultivation to the advantage of the landlords, the cultivators, and the labourers of England, by greatly increasing the employment, food, and wealth of the kingdom." In 1846 the subject was also before the Club, introduced by the late Mr. R. Baker, of Writtle, when it was decided "that many descriptions of grass land would be best brought into cultivation by the system of paring and burning, provided root crops be first taken; but upon the richer soils it is doubtful whether the object may not be effected by the ordinary method of cultivation." As will be gathered from the resolution, the paper and the discussion turned principally upon the best way of breaking the land up but during the discussion Mr. Hobbs said he had a field for which he could afford to pay the landlord double rent, if allowed to break it up. I will now endeavour to give you my views, and it is with the desire and expectation of hearing your more experienced and practical opinions that I venture to address you this evening. Long before I became a member of your Club I took great interest in your transactions, and was greatly struck with the practical nature of your papers and discussions. In treating the subject on the paper, "On grass land: when it can be profitably broken up, or when more profitably kept in grass," I will take the last part first, and show the class of meadow or pasture land that I consider may be most profitably kept in grass, and then show that which may be more profitably converted to tillage, and then give a medium course of treatment. As you will see, I only give general rules, for, as you are aware, in dealing with such a difficult subject, it is impossible to lay down any rule that

shall not have many exceptions, in consequence of the varying circumstances, therefore circumstances must be the guiding-star in deciding the question. For example, arable land in one part will grow forty, and even fifty bushels of wheat to the acre, whilst in another it will not grow twenty-five; or it may grow forty tons of mangolds, while other land with difficulty grows fifteen. The class of land that may be most profitably kept in grass is—first, the feeding or fattening lands, where cattle or sheep will become fat during the summer months without the aid of artificial food; secondly, where the grass land is not more than one-fourth the area of the farm; thirdly, stiff heavy soils that will not carry sheep to consume the roots on the land if converted to arable; fourthly, some of the shallow pasture land having only a few inches of soil; and, fifthly, those hilly fields that would be so expensive to work as tillage. **FIRST:** The feeding and fattening lands, where cattle and sheep will become fat during the summer months, without the aid of corn or artificial food. This class of land is no doubt the most profitable that a farmer can have, as it yields him a greater return, with less trouble and expense. It is more sought after, and commands a higher rent than any other class of land similarly situated, and therefore I would not propose breaking it up; but a good deal may be done in the way of its improvement. Perhaps the greatest evil this class of land (taking all districts) has to contend with is floods; and, although much has been done by the passing of the Land Drainage Act (1861), which enables landowners to combine together to remove water-wheels and other obstructions to the free passage of the water, and the land on streams and rivers has been improved thereby, still we want more facilities to be given, so that it may become more general. Drainage is also a means of great improvement, although much care must often be exercised not to over-drain it—it is sufficient to remove the stagnant water. It is not requisite to dry it quickly, as in the case of arable land; therefore the deeper the drains, and the wider apart they are—provided the stagnant water is removed—the better. Many thousands of acres of this class of land have not been drained for want of an outfall; but this can now be generally provided, as far as adjoining proprietors are concerned; and where sufficient fall is not supposed to exist, on careful examination more is often obtainable than was thought possible to be got. Where the expense is too great to remove mills, the land above might often be under-drained, and arrangements made for a portion of the water-power to be used in pumping such under-drained land. Irrigation may also sometimes be adopted for improving this class of land, and many other modes, which would extend my paper to too great a length, if entered into, such as renovating with fresh grass seeds, manuring, &c. **SECONDLY:** Where the grass land is not more than one-fourth the area of the farm. Here a good deal of caution is requisite before coming to the conclusion that any may be profitably broken up, although in some cases it may. I should prefer in this case to try and improve it in its present state by manuring, renovating with fresh grass seeds, consuming roots upon it, irrigation, and other modes of treatment; but in some places the land is so light, and has such a tendency to grow couch grass, that even this small portion of grass may be reduced with profit. One of the best ways of improving meadow land is to haul the roots and fold the sheep upon the meadows, in the same way as the arable land farmer would upon his tillage, giving them a fresh pen every day. By this means the meadow will be regularly dressed, instead of the sheep lying on those portions of the field that least require dressing, or in a road or some old hedge-row. This, with the consumption of plenty of corn or oilcake, is a certain way of improving meadow land. If straw is plentiful, it may be cut into short litter, and strewed about the pen each day, when it will be trodden into the land by the sheep; and if by this means the arable land is robbed of some of its manure, the increase in the hay crop will more than counterbalance it. **THIRDLY:** Stiff heavy soils that will not carry sheep to consume the roots on the land if converted to arable. It is not desirable to break up and convert to arable this class of land, except under particular circumstances; and sometimes it may be more profitably managed by a medium course of treatment, such as I will notice presently. Of course the great drawback to stiff, heavy soils is that you are so dependent on seasons for working the land to the best advantage; and if you grow much of that improving crop—roots, you have such difficulty and expense in hauling off the roots, that it makes a

material difference—so much so, that I should recommend trying to improve it as meadow land. Some fields of this class can be profitably broken up (if very well adapted) for wheat and beans, and also growing good mangolds. The consumption of roots as before mentioned, renovating with fresh grass seeds, boning, and other manuring may be adopted to improve it. Another mode is planting apple and pear trees; for, if the farmer could manufacture the materials he produces without restriction (sugar and spirits, for instance), a new era would dawn upon this class of pasture land. It appears to me that sugar can in no way be so cheaply produced in this country as upon the apple or pear tree. No seeding, hoeing, ploughing, manuring, &c., is required as in growing beet; the only expense is to plant the trees and pick the fruit. The principal drawback is that you cannot insure a crop every year; but ten or twelve tons of apples to the acre are no uncommon crop, and the value of these fruits is continually increasing, in consequence of the demand in the manufacturing districts. **FOURTHLY:** Some of the shallow soils that are only a few inches in depth. A good deal of the Down land comes under this head, and of this class of land I cannot say I have had much experience; but of course, if only three or four inches of soil is available, it is useless to attempt to make good tillage, although some of these light soils make very fair turnip and barley land, as on the Oolite (Cotswold Hills, for instance); and here the preferable system seems to be to lay it down to sainfoin for a term of years, and the quantity of sainfoin hay sometimes produced per acre is astonishing. **FIFTHLY:** Those hilly fields that would be so expensive to work as tillage. I have had a good deal of experience as to the expense of working hilly arable land, and my belief is, that the difference in the expense is never estimated high enough, for besides the extra labour to the horses you cannot get anything like the quantity of work of any kind done as you can where the land is level, especially in ploughing, hauling on manure, couching, and cleaning the land; but circumstances often do arise where this hilly land is so poor and bad that something must be done, and I will not take upon myself to say it may not sometimes be profitably broken up, especially where the larger proportion of the farm is pasture, but in all probability the medium course is preferable. I will now give the class of land that I consider may be profitably converted to tillage, but in dealing with this part of the subject I would remark that there are two great causes operating against the conversion of pasture land to tillage; first, that which I may almost call a prejudice on the part of landlords, who, having seen the abuse in days gone by from the farmer running the land out after breaking it up, and losing sight of the improved farming of the present day, forbid it altogether; and next from the increased capital required to manage it as tillage. In the former case I would call the landlord's attention to the great improvement made in arable land farming within the last 30 years to what has been made in pasture, and numbers of arable farmers that I know of spend a sum more than equal to their rent in artificial foods and manures, and some even double, so there is little fear of this class of men running their land out, especially if they are allowed at leaving for any unexhausted manures, improvements, &c., in which a landlord can well afford to do for the sake of the incoming tenant, for he may be sure it will be to his own advantage in more ways than one. With regard to the latter, it is of no use for any man now a-days to attempt to farm without sufficient capital, and it no doubt requires more capital to farm tillage to the best advantage than pasture. There is perhaps one other cause operating with landlords and agents in this matter and that is, the clause in almost all agreements of a penalty of in some cases £50 an acre rent for any old grass land that may be broken up without the landlord's consent. This is a very necessary clause to prevent an outgoing tenant doing a spiteful act, by ploughing up any old grass land, but to men who do not understand the nature of it, it appears, and in many cases is, so interpreted that it is put in agreements, because the grass land is so much more valuable, and it has no doubt misled many. A practical farmer writing in the *Mark-Lane Express* of June 24th, 1867, after showing the value of the turnip crop says: "If then the turnip, or rather the root crop is so valuable, why are farmers to be so closely restricted to certain courses or rotations of cropping? and why are such large breadths of moderate, not to say inferior grass lands to remain under pasture?" If modern culture and modern applications of manures and feeding stuffs

are worth anything beyond the old order of management—and no one disputes their worth—they would tell surprisingly upon the conversion of such lands into arable culture. They would thus be made to produce immense crops of roots, artificial grasses, and corn. Vast breadths of these soils would yield capital crops: first, of potatoes, then of wheat, next turnips, or other roots and esculents, *i. e.*, mangolds, swedes, carrots, and cabbages for stock; again potatoes, again wheat, and then clovers or seeds, followed by a corn crop, to be further supplemented by roots again, and so on continuously. This little island of ours ought to be the standing ground for fattening stock as food for the nation, and the importation and manufacture of feeding stuffs must be boundless. It must be made to grow more roots, more grasses, and more animal food. Ireland, too, is still better adapted for this order of management. Scotland grows splendid root crops. Who can tell to what amount our home supplies of animal food might come, or be made to extend?" Most other speakers and writers on this subject have gone into figures to prove the state of cultivation that is most profitable, but figures are so fallacious that I will not attempt to do anything of the sort, for an extra ploughing and cleaning, or an extra 5 bushels of corn would make a great difference in the estimate, and also because in a paper like the present it is impossible for listeners to follow figures; I will therefore take it as a fact beyond dispute, and to be admitted by every member of your club, that there are many fields of light pasture land to be found that would be far more profitable as arable. The point where disagreement would arise would be as that border line was reached, where it may be as valuable for one as for the other. I believe I should not have the least difficulty, if asked whether a field could be profitably broken up, in deciding whether it would be advantageous or not; but I confess to some little difficulty in explaining, or rather drawing the line of distinction for other people to comprehend it. There are so many points to be considered, many of them of such a slight and trivial nature, all to be taken into account before a decision for or against can be arrived at, that I hardly know how to enumerate them. However, some of them would be: adaptability to homestead and buildings—if the field is situate a long way off from this great desideratum for arable land, it would be a great drawback; then as to its growing corn—some land will not grow more than 20 or 25 bushels under any circumstances; then it may be very wet and difficult to drain, or it may be shaded by trees, or adjoining covers abounding with game. The temperature and rainfall has also an important influence as to the decision of converting grass into arable. Ireland, and some of the western counties get too much rainfall for growing wheat to the best advantage, while in many of the eastern counties they do not get enough to grow good roots. A rainfall of about 80 inches appears to be the quantity to enable both roots and wheat to be grown to best advantage. Temperature again, I believe, an important feature; it appears to be necessary to bring wheat fully to perfection to have a portion of the summer equal to a mean temperature of 60 degrees of heat, and situated not higher than 600 feet above the level of the sea; still, for our purpose many of the lands I would propose dealing with are under all the disadvantages mentioned capable of growing splendid roots and oats, and especially potatoes. The following may be enumerated as the most important sorts of land that may be profitably broken up—**FIRST**: The high and dry land that will carry sheep well, especially where the pasture land is more than half the area of the farm. **SECOND**: Where the pasture exceeds one-third or one-fourth the area of the farm. **THIRD**: The alluvial deposits or loamy soils by the river and brook sides, where the stream runs so rapidly that in the formation of the land only the coarser sand and gravel is deposited, and consequently the finer particles of clay so necessary to make up a good fattening soil are taken on by the floods to a more level space. **FOURTH**: Some of the loamy soils that will not carry sheep, where the land is convenient for buildings and the pasture exceeds half or one-third the area of the farm. **FIFTH**: The clay lands that will not carry sheep, but, when drained, grow the best of roots and plentiful crops of corn, and where the pasture exceeds half the farm. The **FIRST** on the list of pasture lands that may be profitably broken up is the high and dry inferior pasture land that will carry sheep well, especially where the pasture land exceeds half the area of the farm. Here much of the class of pasture is poor and dry, and principally grazed with sheep, which bite

the few fine grasses so closely that they are gradually lost, and from its tendency to grow couch grass the grazing with sheep increases this tendency and thus retards improvement, as they do not like to eat it unless it is kept very closely grazed, consequently it gradually kills the finer grasses. This is the class of land that may be most profitably converted to tillage, for roots can be grown and consumed on the land, and one acre of roots and one acre of clover or seeds, with the wheat and barley straw, supposing it to be farmed on the four course system, will keep a good deal more stock than four acres of the original pasture, and surely the acre of wheat and the acre of barley will pay for extra labour and capital. If the pasture land is one half the area of the farm, there can be no question as to the desirability of breaking up, especially as the roots can be consumed on the land by sheep. Under some circumstances the better class of lands may also be broken up with advantage. I have, myself, offered £95 an acre for a field of eight acres and £80 an acre for four other fields in the neighbourhood of my own farm, entirely as a speculation to break up; but of course this is an exceptional case, as it makes extraordinary good arable land. In the neighbourhood of Evesham and Pershore also, much very valuable pasture land is converted to tillage, combined with the growth of plums, &c. **SECOND**: Where the pasture land exceeds one-third or one-fourth only of the area of the farm. Here a little more consideration is necessary, for I consider one-third pasture to two-thirds tillage the most advantageous proportions to make the most of a farm. Still there are many cases that have come under my notice where even if only one quarter of the farm is pasture, some of that quarter may very profitably be converted, if the land is very good for growing roots and corn and bad for grass. Where sheep are the principal stock kept, there is not the necessity for so much pasture, as they can be kept in the summer on the clover and artificial grasses eked out as their keep now is by mangolds, corn, and cabbage during the summer months. **THIRD**: The alluvial deposits or loamy soils of the river and brook sides, where the stream runs so rapidly that in the formation of the land only the coarser sand and gravel is deposited, and consequently the finer particles of clay so necessary to make up a good fattening soil are taken on by the floods to a more level place. I have had some experience of this class of land, and where it is not very liable to floods, it makes some of the best tillage obtainable. On the banks of the river Wye, which is very rapid river, there is a good deal of this class of land, especially between Hereford and Ross, combining all the requirements for growing corn and keeping sheep, but which will not fat cattle, and would be doubled in value by being converted into arable land. Since writing the above, I am informed that a large landed proprietor, below Hereford, is extensively breaking up exactly the class of land to which I am alluding, but, I believe, more with the view of laying down again than as making tillage. **FOURTH**: Some of the loamy soils that will not carry sheep, where the land is conveniently situated near buildings, and the pasture exceeds one-half or one-third the area of the farm. This is a little different from the last class of land, inasmuch as the farmer has the expense of carting off the roots; still, under the circumstances mentioned above as to buildings and with a sufficiency left, some of the pasture may be profitably broken up to tillage, but more care is requisite than in the former cases. **FIFTH**: The clay lands that will not carry sheep, but when drained grow the best of roots and plentiful crops of corn, and where the pasture exceeds one-half the farm. This is the most difficult class to define, as to converting it into tillage for a permanency or not; still, if the pasture exceeds one-half the farm, it may often be profitably done where it is well adapted for stock and convenient to the homestead, and a further advantage may be gained by breaking some up and growing roots, these roots to be taken and consumed by sheep on the other pasture land, as already explained. Having now disposed of the land that may not be broken up, as also that which may be profitably converted into tillage, I come to a very large class of land that has been to some extent passed over—*viz.*, the poor heavy clay pasture, down lands, hilly and mountainous tracts of land, and numerous other lands that will suggest itself to your minds that is not first-class for growing corn, and still may be made to produce greatly increased crops of grass by the medium course already alluded to, which is its being simply broken up to tillage for two or three years and relaid to grass. The great drawback to this not being more successfully carried out than it is at present is

hat sufficient attention is not paid to the selection of those grass seeds suitable for the locality, and other circumstances attendant on the case, and also to the fact that grass seed is not put on in sufficient quantity, for we not only want to get a plant for stock, but a very thick one, if you want to get the full benefit the land is capable of producing, and I have never yet seen a fresh land pasture field too thick. Instances have come under my notice of land, laid down to grass in April, cutting more than a ton of hay per acre in September. I also extract the following from a Book on Grasses, by Messrs. Wheeler and Son, of Gloucester as confirmatory of what may be done in this way. "The largest crop of hay that we ever remember to have heard of, was the produce of some seeds supplied by us to Mr. Hurcombe, of Uley. The clover and grass seeds were sown on 6½ acres; it was mown in June, 1865, producing a splendid crop. Immediately after it was made and put in a rich rain came, the aftermath grew most luxuriantly, and in due time was made into hay. The two ricks were sold by auction in March last by Mr. Organ, and were purchased by Messrs. Holmes and Co., of Stroud. Our attention was called to the following paragraph, which appeared in the *Gloucester Journal*, March 10th, 1866: 'The high price of fodder may be estimated by the sale of some clover hay, which took place at the King's Head, Uley, on Thursday last, when the produce of 6½ acres of land was knocked down at the sum of £104. The seed was purchased of Messrs. Wheeler and Son, of Gloucester.' On inquiry of Messrs. Holmes and Co., we received the following reply: 'Gentlemen—In reply to your inquiry respecting clover hay we purchased of Mr. Hurcombe, of Uley, we beg to enclose copy of the weighbridge tickets, by which you will see there was 24 tons 7 cwt. 2 qrs. of first-class hay, in addition to which there was about 7 cwt. of tops and bottoms, which we did not think worth the trouble of weighing.' I give this in full, as it is authenticated, and shows a return of £16 per acre, being nearly 4 tons of hay to the acre. I consider it a mistake to plant the seeds amongst corn if laying down for 4 years or for permanent pasture, for if you get a good crop it kills the young seeds, and if a poor crop it (with the expense) is no better than the extra grass is worth. I would suggest the following: double plough, or breast plough and burn (if the land is very loose and spongy), and then take a crop of oats; then wheat; and next turnips, and after eating off the turnips prepare the ground as for barley, and not put the barley, but seeds, for 3 or 4 years' ley, consisting of—

- 4 lbs. Pacey's perennial.
- 3 lbs. Italian ryegrass.
- 3 lbs. Cocksfoot.
- 2 lbs. Timothy.
- 2 lbs. Meadow fescue.
- 3 lbs. Red clover.
- 3 lbs. Cow grass.
- 3 lbs. White honeysuckle.
- 1 lb. Alsike.
- 4 lbs. Trefoil.

This of the best quality should not cost more than 2s. per acre. These should on no account be grazed the first year, but mown in September, and again early in the following summer, before any seeds are formed in the plant, for as the roots of plants of this class increase in proportion to the top, you get a stronger plant than by grazing and keeping it short; it may then be grazed for two or three years, and then ploughed for wheat; then barley, and cleaned and planted with turnips, and laid again for three or four years; by this means I am sure greatly increased crops may be grown even on the colder heavy land that would not pay in permanent tillage; and on the other hand, as you are aware, the heavier class of soil, if laid to permanent pasture after the first three or four years, produces (even if well manured) a very small return for some years. This is due to the consolidated state the land gets into, and prevents the circulation of the air in the soil: it is especially noticeable in fruit trees, where the land is laid to grass. After the trees are full grown it does not seem to affect them for some few years, and then the trees stop growing, and become covered with moss, and scarcely bear any crops at all. I know of some land that has been laid to grass for 20 years, and is still very poor bad land. If you take a spade and dig up the soil in a field laid for four or five years, and compare this with old turf, it will illustrate what I mean, and it will be found that you can scarcely get the spade into the newly-laid

land, from its firm compact state, and you cannot fail to come to the conclusion that the land in such a state is not fit to grow anything. I am convinced that it is to this cause that the deterioration of newly-laid land proceeds. I have specially noticed a good many fields, when out valuing, and having a spade with me; but as in the course of years the land gradually reverts back to a looser and more healthy state, for the percolation of the air and water, it gradually improves. There is little doubt that it is to this difficulty in relaying land to grass that makes landlords so unwilling to allow old turf to be broken up. The only writer that I have met with upon grass land that bears me out in this view, as to the cause of not getting turf land, is Mr. H. S. Thompson, who in vol. xix., p. 259, of the "Royal Agricultural Society's Journal," says, "All the graminæ that are of value for grazing or mowing, require a fine tilth or mould, as a condition of their successful cultivation. For the first year or two after strong land has been laid down, it retains, to some extent, the porous texture induced by the thorough disintegration which it receives in course of preparation for sowing. The second winter, however, generally obliterates all traces of previous cultivation, and the close and sodden state of the land, which then supervenes, is highly unfavourable to the growth of grass. The land may contain a sufficient supply of all the elements of plant nutrition, but they are in a crude state, and a constant supply of oxygen is required to promote the decomposition of the mineral and vegetable matters, and their recombinations in forms available as plant food; so that if air and water cannot easily and quickly pass through the soil in repeated succession, a check is given to nature's underground cookery as completely as if the flues were stopped in the farmer's own kitchen, and the dinner had to be prepared without any possibility of lighting a fire. Hence, the sudden falling off in the produce of newly-laid grass on strong land, and hence the necessity, at this critical period, for an abundant supply of plant food on the surface to compensate for the falling off below." There is, I think, little doubt, that it is to this cause that the difficulty arises in getting fresh permanent pasture, at all events, whatever the cause of it may be, the fact is patent to everyone, and, therefore, I have every confidence in recommending the medium course under the circumstances I have mentioned. Before concluding my paper, I will refer to one subject that you will, no doubt, have observed that I have scarcely touched upon, and that is, how the land should be treated in breaking up. A few years ago I should have had no hesitation in giving my opinion on the course to be pursued; but having been since engaged in making a detailed valuation of the Clan Union, in Shropshire, consisting of some 85,000 acres, 15,000 to 20,000 acres of which has probably been enclosed within the last 20 years, I had special opportunities of witnessing a great variety of ways in which this land was treated in being broken up to tillage, and when I saw that the owners of, perhaps, three adjoining fields would each adopt a different course, I came to the conclusion that no one system could be much better than another as to be indiscriminately recommended. There are three common modes of treatment, and it must be left to the farmer himself to decide which he considers best for his particular case. 1st. To breast plough and pare and burn. 2nd. To pare and store the turf up in heaps to rot. 3rd. To double plough. Where the land is very spongy, and infested with insects, perhaps the first is preferable, especially if there is any difficulty in getting it firm enough to grow wheat; but as by this means you lose vegetable matters, if you can do without the burning it is better, while if stored in heaps you always have a reserve of manure either for that field or any other; but at the same time there is the expense in both these systems which is considerable. The first seems to be preferable on the oolite and lias formations; on the latter, especially, is burning to be recommended. Mr. Randell, of Chadbury, near Evesham, has done wonders with his arable land by burning it, but on the sandy and lighter soils burning would no doubt be wrong. Whatever system is adopted it will almost always be necessary to lime heavily with fresh quicklime, for old turf appears to get in a kind of acid state, and these acids sometimes require neutralizing before the land will grow corn well. Mustard and rape, seeded on newly broken up land, I have seen recommended, but as I have had no experience in this, perhaps some gentleman who has will give us the result. I will now conclude as I have given you the class of land that ought not to be

broken up, that which may be, and also a medium course, which I believe might be very often profitably adopted on each class of land, and be the means of doubling the increase of food now obtained from much of the inferior pasture even on hill and mountain land, and which I have every confidence in recommending to your notice from what has come immediately under my own observation; and if from our discussion to-night we can show that even one-half the 22,000,000 acres of grass land in Great Britain and Ireland can be improved to the extent of 10s. per acre per annum, we prove that a saving would be effected to the country equal to £5,500,000 every year: and therefore I think our labours will not have been in vain.

Mr. C. S. READ, M.P., said he thought that in treating that subject it was necessary for them as practical farmers to arrive at a principle. They were constantly lectured on their duty to the public. They were constantly told that in these days it was the duty of the farmer to grow more; but he believed that that was a secondary duty, and that the main duty of the farmer was, if possible, to make his farm pay (Hear, hear). He, for one, knew perfectly well that pasture land might be broken up and might produce more meat, and yet what was done might be an utterly losing game. Coming as he did from a district where there was not rain enough to grow roots profitably, and where, therefore, they never attempted to get a large quantity of grass, it might seem presumptuous in him to say a single word on that occasion, but he recollected having in the midland counties broken up grass land at considerable expense. It was an ordinary cow pasture, as ugly and beggarly a piece of land as anybody ever saw, but did somehow or other make a large quantity of butter. They drained it, they subsoiled it, and they spent an immense deal of money upon it for artificial manures and labour, and the result was that, although they were no doubt very good citizens, the pecuniary benefit to themselves was nil (Hear, hear). Therefore, when practical farmers were talking about breaking up pasture lands his advice to them was to look at the expense before they thought of extensively turning up even inferior lands.

Mr. G. SMYTHIES (Marlow Lodge, Leintwardine) said one great benefit of their meeting there was that they heard the opinions of men from different parts of the kingdom (Hear, hear). They had just heard the opinion of a gentleman who came from the east, where the climate was very different from that of the west; and as he (Mr. Smythies) came from the west, perhaps the meeting would bear with him while he said a few words in favour of grass lands. He wished it to be distinctly understood that he came from a district where there was a great deal of rain, and where, therefore, grass might be more valuable than it was in other districts. He did not for a moment pretend to say that what was good for the grass land there would be good for other land; but, speaking of a county where there was a good deal of moisture, he must say he did hesitate before ploughing up a piece of grass land; at all events he should first of all give the grass land in such a district a chance, which he feared had not in all cases been done. He had no wish to find fault with anything in Mr. Cadle's paper, to which he had listened with great pleasure, but he could hardly agree with what was said there about over-draining. Mr. Cadle seemed rather to think that they could over-drain, whereas he (Mr. Smythies) considered it scarcely possible to do so. What he meant was that they could not over-drain, there being a certain amount of moisture which it was impossible to remove from the land. No doubt there were some pastures which were so hard that the air could not readily find its way into them; but if such land was manured and the worms were encouraged to work it, it would so become sited. His own rule was to have grass in every field where he could get water. But he had not left the grass in its original state; he had done a great deal to improve it, and on wet land that was no easy matter. Having tried various kinds of manure he had found that farmyard manure always paid best. Wherever they had light land they could afford to apply farmyard manure for roots and artificial manure for turnips. In the case of heavy land artificial manure did not do so well, and, therefore, it should be used sparingly; but with moderately light lands where they put sheep on the tillage there was no difficulty whatever. His advice was that before breaking up grass lands they should give them a fair chance by manuring them and by eating the roots off them as circumstances might suggest (Hear, hear). Practically on

tillage land they required to sow in March or April with corn crops. There was a difficulty in keeping sheep there, but there was no difficulty in keeping them on grass land, and the land was at the same time very much improved. He did not say anything about grass land in dry climates, having had no experience in the matter. One word with regard to grass land almost forcing farmers to keep stock. If land were all in tillage they could keep stock or not as they pleased; in other words, if a man did not farm well for want either of skill or of capital he might scourge the land and obtain good corn crops, and he thought that was a matter well worthy of the attention of gentlemen who had to do with the preparation of farm agreements.

Mr. H. TRETHEWY (Silsoe, Amphilh) said they had had the experience of a gentleman from the eastern counties, and also that of a gentleman from the western counties, and he cordially endorsed the sentiments which they had expressed. The first thing to be considered in the treatment of land was climate. They knew very well that in the eastern counties, where the climate was so dry, grass land was quite out of the question; they knew very well, too, that in the western counties, where the climate was moist, and where the rainfall was so great, the land was best adapted for the growth of grasses: and he believed that in a moist climate a man could not make a greater mistake than by converting grass land into arable, just as in the eastern counties no one could make a greater mistake than by converting arable land into grass. He had had a great deal to do with the management of land in different counties of England. He knew Gloucestershire, from which Mr. Cadle came, very well; and he knew that a large portion of the land there consisted of grass land of good quality, while some of the grass land was very thin. As he had remarked before, the first thing to be considered was climate; but even in the case of the midland counties, it was in his opinion a great question whether it was desirable to plough up what was called indifferent grass land. It had been the practice for many years in different counties to fold off the grass land for the benefit of the arable land. In fact, he had frequently observed in Leicestershire that farmers sacrificed their arable to their grass land, while in Bedfordshire farmers sacrificed their grass land to their arable. In Leicestershire farmers potted their grasses while in Bedfordshire they folded off sheep on the grass land during the day and kept them on the arable, though the practice had decreased lately during the night. That had been the case for a long time; but both systems were, in his opinion, wrong. The arable land should have a fair chance, and so also should the grass land. In the midland counties there was some of indifferent grass land. Still that district he took to be the medium. The east and the west represented respectively corn and grass, while the midland counties produced both. He thought it was very questionable, taking into consideration the proportions of arable and grass, whether in the majority of cases it could be desirable to break up much grass land. Of course, if there was a very large proportion of grass the case was altogether different. He would now make a few observations in reference to the treatment of grass land. He believed that if grass land were more generously treated than it usually was it would not be found so unremunerative. He could point to several pieces of land which had been drained and manured, and brought into first-class condition; and he could point to other pieces of land, which had been broken up and manured, and been converted into good arable land. But the first thing to be determined was, how far it was desirable to make such changes; and that was a question which must depend upon circumstances. With regard to draining, he rather differed from Mr. Smythies. He (Mr. Trethewy) did not hold with the draining of grass as much as arable land; for this simple reason, that whereas in the case of arable land they wanted to get rid of the moisture in order to secure the ripening of the crop, in the case of grass land they did not want the grasses to ripen, but what they desired was a continual verdure (Hear, hear). He would give an illustration. He would suppose that they had a piece of land which was very wet. For example, he had that very day noticed a good deal of land that was covered with water. Some persons might have said that that land wanted draining, but he would not drain it on any account. On another piece of land he saw carnation or ribbed grasses, and various other indications of moisture. He did not care how soundly that land might ride; he said it was a description of land which required

draining. He would be guided by the herbage which was produced on the land rather than by its actual condition, whatever that might be; and he would not drain the land as much as he would if it were required for arable purposes. With regard to laying down land, he was very much inclined to go with Mr. Cadle. He thought that a great mistake was often made in laying down land for pasture; that was to say, on the after treatment of it. Where land was properly prepared, and a fair amount of seed was sown in the first spring, in his opinion nothing could be more destructive than to graze it with sheep (Hear, hear). The sheep, of course, picked out the young and tender grasses, and nibbled them all up. He held that in the first year such land should always be mown, and he would not have a sheep on it for two or three years. He did not attach as much importance as many people did to the condition the land was in when it was first laid down. Of course, the cleaner it was the better, but he did not care much about it being a little foul (expressions of dissent). That might appear a strong declaration (Hear, hear), but he would tell them the reason why he took that view. He had seen the very best grasses sown, and after they had died away the natural grasses of the country would come up and take their place. He knew a field which had been a piece of wheat stubble, as full of twich as it would hold. Nothing was done to it beyond manuring it, and the result was that the twich gradually died away and the grasses came up, and now that was as fine a piece of pasture as could be seen.

The CHAIRMAN: Where was that?

Mr. TRETHEWY said it was in Cornwall; and he was not afraid to say that the result would be similar in Bedfordshire. The grand thing in the case of grass-land was to put plenty of powder in it, and it would then produce a good herbage.

Mr. COUSSMAKER (Westwood, Guildford) said he wished it to be understood that the observations he had to make, related to poor clay-land. The breaking up of grasses appeared to him a very delicate subject, and he did not think there were many cases in which good tenants, especially if they had a long lease, would desire that to be done. As regarded the finest pastures in the midland counties, would any landlord in his senses consent to their being broken up?

The CHAIRMAN said Mr. Coussmaker must excuse his remarking that Mr. Cadle had not proposed anything of the kind; he did not advocate the breaking up of fattening lands, but only that of the inferior lands (Hear, hear).

Mr. COUSSMAKER, continued: There were various kinds of grass lands. Some were best adapted for the making of cheese or dairy purposes; and he held that these ought to be retained in pasture. Again, some inferior lands were chiefly adapted for the rearing of stock, and if lands of that description were to be broken up, it would be impossible to obtain animals for feeding, as he did not want to see foreigners introducing more of their inferior stock; there had been too much of that already. Having had a good deal of experience in the laying down of grass land, he must say that he doubted very much whether, after the first year or two, it would be found as profitable to break up grass-land and relay it as many persons supposed. If he wished to lay down with corn, of course he would sow it in the spring. He would, however, take very good care to sow his spring corn very thin lest the growth should be too strong; the young grasses only required to be sufficiently protected from the heat of the sun. It was in July that he had been in the habit of sowing his grasses without corn. Taking one year with another, that month was generally showery, and it was a grand point to get the young grasses strong enough to stand against the winter frosts. He agreed with a preceding speaker that they might over-drain grass lands, and supposing the pastures were very wet or aquatic in their nature, the result of over-draining would be that they would die off, and an immediate loss would follow. He did not mean to deny that they might eventually get better grasses, but they would have some years to wait for them. When laying down grasses he had generally got his seeds from Messrs. Sutton of Reading, he describing to them the soil, they sending him the grasses which were most suitable to it. In the first two or three years he obtained abundant crops, but after a time the grasses sown died off, and the natural grasses took their place. As regarded manuring, he had dunged, and dressed with lime, earth, and mixed composts, and so on; but what he liked best was bones, preferring half-inch bones to bone-dust,

because with the former he knew what he was buying. He mixed the bones with earth, and left them till they were almost entirely decomposed, and he applied the bone-dressing to his pastures in the spring. In Cheshire, which was so notorious for its cheese, the application of bones was like drainage, treated as a permanent improvement, and he believed that in many instances the landlord made the outlay and charged interest to the tenant. The question of the breaking up of grass lands on particular farms, or of the proper proportion of arable and pasture, depended, he conceived, on what the farmer wanted to do, as for example, whether he wanted to produce corn or stock, and that system would of course be best for him which he considered was most likely to be profitable.

Mr. J. SMYTH, jun. (Wallington Bury, Baldock) said he perfectly concurred in the opinion that it was possible to over-drain pasture land. He did not agree with Mr. Trethewy that they might lay down arable land in an unclean state and it would afterwards become clean. As a practical farmer he considered it necessary to cleanse the land before laying it down, and they might then expect a good result. He did not think they could smother twich and other weeds in the manner that was suggested.

The CHAIRMAN observed that Mr. Trethewy spoke only of Cornwall.

Mr. SMYTH said whatever might be the case in Cornwall, it would not do in Hertfordshire (Hear, hear).

Mr. NEILD (Worley) thought they were greatly indebted to the gentleman who introduced the subject, especially for drawing the line in that case so carefully and with such judgment that they who ran might understand. He felt that it was generally most undesirable to break up grass land which was paying its way as grass land. He came from the district of Lancashire and Cheshire, and had had a good deal of experience connected with the cattle plague there, and he knew some persons who had had cause to mourn and lament over land which they were compelled to break up because they were afraid to keep cattle, their experience having been worse, perhaps, than that of Mr. Read, in the case of the cow pasture. He could entirely confirm what was said by a previous speaker about the use of bones in Cheshire. Some very stubborn clay lands there had, through the use of bones, produced an abundance of excellent white clover. He (Mr. Neild) did not think any portion of farming required so much attention as the management of grass lands. As regarded the prizes at agricultural shows for roots, they all knew that roots were nursed, and the thing was not in reality what it appeared to the public generally; but he was sure that grass lands required in the present day the special attention of farmers' clubs. They knew very well that grain could be brought from the ends of the earth almost at less cost than a farmer in the midland counties could send it to the London market; and, therefore, it well became them to consider what would pay best. As to the philanthropic view of the matter, and farmers doing this and that for the benefit of the public, they had found the public very grateful to them (laughter); but, nevertheless, they must endeavour to farm each for themselves, as well as for the public (cheers). He was very glad to hear some of the leading farmers taking part in those discussions; but he should be still more glad if the discussion took a rather more practical shape. If he might presume to say so, he would remark that the discussion seemed to have been almost confined to sheep and grain. He knew that those things were essential; but, considering the vast quantities of bacon, cheese, and butter which were brought to this country from abroad, he could not help feeling that the grass-lands had not engaged sufficient attention. He did not think the grass-lands of England produced a quarter of what they ought to produce. He perceived that sewage formed the subject of the next discussion in that Club; and he was glad that that was the case, for sewage had an important bearing on the question now under consideration. The use of the refuse of their great towns was now, as they all knew, one of the great questions of the day; and he hoped they would all go away from this discussion with a desire for the improved cultivation of grass lands. His own experience with regard to the liming of grass-lands was very valuable. Three years ago he put on seventy acres of meadow-land six tons of gas-lime per acre. The corporation of Manchester having a great deal too much of that article, he agreed to remove all that there was; and the result showed that he was right. He had the liming put on the land in a

peculiar way. He did not believe in the necessity of making a compost. He had it all screened through an ordinary gravel screen, and afterwards loaded into one-horse carts, a man standing on the top with his back to the horse spreading the lime broadcast from a spade, the land afterwards being well brush-harrowed. That was done about the month of December, 1867. By the end of February the effect on the field was strikingly manifested, and the result to the hay crop in 1868 was such a swathe of improved sweet herbage as had not probably been obtained for many years before. He made a similar contract last April; but consented to the parties from whom he purchased supplying some of their old customers as well as himself, when, on his sending to remove it, there were five-and-twenty teams waiting in advance of his own, and out of about a thousand tons he only got about 300. The truth was that others had become aware of the benefit to be derived, and knew how useful the article was in grass equally with arable cultivation.

Mr. T. B. DRING (Clarby, Spilsby) observed that the real question was whether it would prove profitable to break up grass land. It was natural for them to wish to do it when the price of wheat was high; but pasture land could not be broken up one day and re-converted into pasture again the next. It would not do to break it up merely because wheat happened to be high, and mutton a low price. They all knew from experience that there were years of prosperity for corn growing, and years of prosperity for producing beef and mutton. The question arose what description of grass land it would ordinarily be found most profitable to convert into arable land; for if grass land were broken up when corn was dear, that might be proved to have been a great mistake when it became cheap. He thought that in the western counties it would in most cases be dangerous to break up grass land; while in some of the counties more especially adapted for the growth of corn, such counties as Lincolnshire and Cambridgeshire, where a large proportion of the farms consisted of grass land, it might be profitable to break some of it. In cases in which land was naturally poor, by growing corn crops and root crops, and consuming the roots on the land, they might be enabled to feed a great deal more stock than they could while retaining such land as pasture, and thus turn it to more profitable account. On the other hand there were some descriptions of land which it would be very wrong to break up. He thought that farmers generally were more ignorant with regard to the improvement of pasture than with regard to that of arable land, especially in districts where "corn" was the farmer's motto. He was of opinion that in the case of some pasture land, if farmers paid more attention to the feeding of stock, fattening them with cake and other substances, they could greatly increase the value of the land, and find pasture more profitable. The description of soil which Mr. Cadle meant was, he believed, heavy clay soil, where it was not practicable to grow and consume root crops on the land. He (Mr. Dring) thought that that was a kind of land which, if it were of tolerably good character, it would be better to keep for grass than to break up. He did not believe in the carting of roots for arable land to any great extent. If they grew roots on arable land and carted them off the result was impoverishment, and there was a great deal of labour and expense. There were one or two remarks of Mr. Cadle that seemed to be a great recommendation of the breaking up of grass lands. He spoke of 6½ acres yielding in the locality to which he alluded 24 tons of clover hay at only two mowings, and of the proceeds amounting to £104. That spoke volumes for the breaking up of poor grass-land. As regards the statement, however, that there was a ton and a half of tops and bottoms in addition, he must say he did not think that showed good management.

Mr. CADLE: There were over seven tons.

Mr. DRING said he admitted that the balance sheet was a good one, but he could not see why the ton and a half of tops and bottoms should not have been made as valuable as the rest, if attention had been paid to the steddle and thatching. Mr. Trethewy recommended that when grass land was laid down with seeds, it should be mown for two or three seasons and not stocked with sheep. He (Mr. Dring) differed from Mr. Trethewy *in toto*. He thought that when land was laid down as a foundation for corn crops it ought to be grazed with sheep.

Mr. TRETHEWY remarked that he spoke of permanent pasture.

Mr. DRING added that in the breaking up of pasture land farmers generally ought to be guided by soil and climate.

Mr. T. CONGREVE (Peter Hall, Brinklow, Coventry) said he was very glad that the discussion had taken the turn that it had, differing as it did from some discussions to which he had listened. They had been told under that roof about the importance of British farmers breaking up every acre of land that they could, inasmuch as every acre kept in permanent grass was farmed at a loss, while every acre of arable land was sure to prove profitable (laughter). As regarded Mr. Cadle's remarks, so far as the good descriptions of grass land in the midland counties were concerned, he (Mr. Congreve) denied that there were many thousands of acres in Northamptonshire, Leicestershire, and other counties which could be profitably converted into arable. It would take a considerable amount of capital to effect such an alteration; and if the views of a well-known member of that Club, and a former alderman of the City of London, were carried out, in the months of June, July, August, and September, London would find itself very short of beef and mutton (A Voice: "We have heard of a bullock and a sheep to the acre"). He had known land that would bear that. Such land as he alluded to could not be stocked with the same amount of capital as arable land. He thought that discussion was likely to do good. His advice to all intending breakers-up was that they should calculate the cost before they did it, have due regard to climate, and see whether they could not keep a greater amount of stock, and by using cake, &c., improve the land. They all knew that with the present price of corn they were farming at a loss. Unfortunately there were seasons when it was impossible to rely on peas and beans. The grass lands were in a better position in some respects than arable lands, and therefore it behoved them to consider well before breaking them up (Hear, hear).

Mr. J. BRADSHAW (Knole, Guildford) said he felt sure that what had fallen from the different speakers that evening would produce a very beneficial effect throughout the country. He was satisfied that the poor pastures of his own county had been neglected. He had been for many years a member of that Club, and until that evening he never heard an opinion expressed there as to the effect of using bones upon land in the south of England (cries of "Oh! oh!"). He knew the effect of bones in Cheshire and Lancashire had been stated. Forty years ago he saw that effect on a neighbouring farm to that with which he was connected, and boiled bones were then applied in the district to which he alluded at the rate of a ton per acre, the cost of bones being at that time £5, while it was now £7 10s. He had imported bones at £3 10s. per ton, and applied them to his land.

Mr. COUSSEMAKER observed that he had applied bones at the rate of half-a-ton per acre, in order to see what the effect would be.

Mr. BRADSHAW added that the effect of applying bones to land was just the opposite of what some persons supposed; the use of them deteriorated the quality of the cheese in Cheshire.

The CHAIRMAN said before he called upon Mr. Cadle to reply he would remark upon the advantages which they as a national club possessed over a mere local one. They had not only "wise men from the east," but they had wise men from the north, the south, and the west (laughter); and if the introducer of a paper failed to recognize the great importance of climate, soil, and other circumstances, they were sure to find gentlemen from other parts of the country ready to put him right and direct attention to those very important considerations (Hear, hear). Mr. Read, with his usual penetration, took a pounds, shillings, and pence view of the subject, and no system that would not bear that economic test was worthy of the consideration of that or of any other club (Hear, hear). Mr. Cadle mentioned in his paper that the breaking up of inferior grass lands led to an increase in the number of labourers, an increase in the beef and mutton to be supplied to the millions of this country; and, therefore he advocated an increase in the growth of roots and grasses, and, indirectly, of animals. He (the Chairman) believed that Mr. Cadle was right, and that it was good policy to break up the inferior grass land of this country; but, on the other hand, he

held that it would be sheer madness to break up the best grass lands (Hear, hear). Corn could, as Mr. Neild reminded them, be imported from the ends of the earth; but the area from which the nation could draw its supplies of beef and mutton was, comparatively speaking, a very limited one. The prevalent opinion in his own county was that with two-thirds or three-fourths of arable land, and one-third or one-fourth of grass, they made a larger return and greater profit than could be obtained when a larger proportion of the land was arable. Mr. Cadle remarked upon the different methods to be pursued in the breaking up of grass-land. He (the chairman) had had some little experience in that matter, and before he determined to break up some inferior grass lands in his possession, he consulted a man who was a great authority in Bedfordshire, and also in other parts of the kingdom, he alluded to Mr. Thomas Bennett, who was for many years agent of the Duke of Bedford. Mr. Bennett said, "If you had a lease for a great number of years, I would not recommend you to pare and burn, because what you would gain in the first three or four years you would lose in succeeding years. Paring and burning," he added, "are simply mechanical operations, and by resorting to them you destroy much fertilizing matter that would otherwise remain in the soil; but," he went on to say, "if I were a tenant from year to year, and had the option of breaking up land, I would pare and burn." He followed Mr. Bennett's advice, and had had no cause to regret it, for he had seen no sensible diminution in the fertility of the fields which had been thus treated. In one field he had tried the storing of turf, and he had seen cause to regret that; injury had been inflicted on the land, which was a strong clay, by carting it off. Nothing, or scarcely anything, grew along the headlands for years, and the labour of taking the turf back to the land was so great that he could not recommend other men to adopt the practice. He believed that the most profitable plan was one not mentioned by Mr. Cadle. A great deal of inferior grass land had been broken up in Bedfordshire during the last 30 or 40 years on the clay lands. The most successful men have been those who made a summer fallow, and followed that with a crop of oats or of wheat. They cropped two or three years in succession with white straw, and, by means of a summer fallow the first year, they got rid of the wire-worm, which was one of the main objects of paring and burning. He quite coincided in the opinion expressed by Mr. Trethewy, as to the policy of keeping sheep off land recently laid down as permanent pasture. He had found the most injurious results to arise from the practice of putting sheep on young seeds of grass which had just been broken up. In such cases the sheep picked out all the finer grasses, and there was no more effectual mode of destroying the prospect of a good turf than stocking newly laid-down grass too soon with sheep. Mr. Neild seemed to have forgotten what the Club had done in years past. So far from its attention having been confined to sheep and grain, those were really exceptions in the list of subjects discussed. In turning casually over the record of the questions considered, he found the following: In April, 1861, there was a discussion on "Sheep and Bullocks as Manufacturers of Manure;" in May of the same year the question, "By what Means can the Feeding of Stock on Pasture Land in Spring, Summer, and Autumn be so increased as to supply the Demand of an Increasing Population?" was introduced by Mr. Owen Wallis; on the 7th of April, 1862, "Dairy Management" was introduced by Mr. Dumbrell; on the following 8th of December the question of "Stock versus Corn" was brought forward by Mr. Robert Smith; in December of the next year Mr. Coleman introduced "The Breeding, Rearing, and Fattening of Stock upon Arable Farms, and the Capability of such Farms to produce Meat;" on the 3rd of April, 1866, Professor Coleman read a paper on "The Management of Grass Land," and in the following December Mr. Duckham one on "The Breeding and Management of Cattle;" in May, 1866, Mr. Robert Smith raised the question of "Increasing the Supply of Animal Food;" on March 2, 1868, Mr. Jackson, of Tattenhall Hall, Chester, introduced the following, "Would not the Making of English Cheese be Generally Improved by the Introduction of Cheese Factories?" and on the 7th of December in the same year Mr. J. K. Fowler, of Aylesbury, read a paper on "The Influence of Railways upon Agriculture." He repeated therefore that sheep and grain seemed almost to have been exceptions, instead of having engaged exclusive attention

(Hear, hear). He must also observe that he was surprised to hear Mr. Bradshaw, who was an old member, say that that was the first time he had ever heard bones recommended in that Club for application to grass land.

Mr. BRADSHAW: I said in the south (Hear, hear).

The CHAIRMAN continued: Since he became a member of that Club he had heard bones recommended about fifty times for almost universal application. Mr. Cadle referred to the important question of the evils which river mills inflicted on a large breadth of land in this country. He thought that in days when steam power was so much cheapened, and when the prices of beef and mutton were so high, it might fairly be said that the time had arrived when the Legislature should deal with that question. Thousands and thousands of acres in this country were water-logged through miserable bits of mills which barely yielded a living to the occupiers, and if he continued of the same mind as he was at present, he would call the attention of the House of Commons to that subject in the approaching session.

Mr. CADLE having briefly replied, on the motion of Mr. Marsh a vote of thanks was accorded to him for his paper.

On the motion of Mr. H. Trethewy, seconded by Mr. T. Horley, junior, a vote of thanks was given to the Chairman, and this terminated the proceedings.

At a meeting of the Committee on Monday, February 7, a Sub-Committee, consisting of the Chairman, Mr. James Howard, M.P., Mr. Cuthbert W. Johnson, and Mr. Sewall Read, M.P., was appointed to look to any Educational measure brought forward by the Government, and to report thereon to the Committee.

The Secretary reported that a complete set of *The Devon Herd Book* had been presented to the Club, by the Editor, Captain Tanner Davy, of Rose Ash, South Molton; and a complete set of *The Sussex Herd Book*, by Mr. Alfred Heasman, of Church Farm, Angmering, one of the Editors; and the thanks of the Committee were ordered to these two gentlemen.

NEW MEMBERS.

Elected January 3.

W. H. Brown, Liddington, Rutland.
J. T. Burnell, Bronsberg Villa, Kilburn.
D. W. Hill, Pinner.
F. J. Sedgwick, Watford.
W. Shaft, Arundel.
J. S. Surridge, Coggeshall.

February 7.

W. Clutton, Penge.
J. W. Ellis, 18, Old Broad Street, E.C.
W. Fairs, Aston, Great Budworth, Northwick.
E. Fox, Jun., Rosemount, Finchley.
A. R. Greenfell, Shalford, Guildford.
H. M. Jenkins, Royal Agricultural Society, Hanover Square.
T. Mace, Shirburn, Northleach.
T. Rigby, Over, Winsford, Cheshire.
M. Roker, Snowdenham, Bramley, Guildford.
J. Scott, Ifley House, Horsey.
J. Taylor, Southill, Biggleswade.
A. Waterer, Nap Hill Nursery, Woking.

THE FISHER HOBBS TESTIMONIAL.—At a meeting of the committee held at the Salisbury Hotel, on Monday, February 7th, Mr. Henry Trethewy, who was in the chair, stated, as surviving executor, that it was Mr. Fisher Hobbs' desire that the testimonial portrait be presented to the Farmers' Club. It was, therefore, resolved that Mr. Knight, E.A., the artist, be directed to deliver the picture at the Salisbury Hotel for that purpose. Mr. Trethewy was appointed treasurer, and the honorary secretaries were requested to pay into his account at Barnett, Hoare, and Co., the balances in their hands respectively. The treasurer was then instructed to pay the balance of £89 5s. due to Mr. Knight. It was determined to hold another meeting to decide as to what should be done with the small balance still remaining, after the payment of his account.

THE NEW FARM.

What glorious, bright, a parking, frosty weather it was! It put everyone in such spirits. The bailiff merry; the labourers pitch with a will, as the empty dung-carts return rapidly over the hard fallow. We are putting a good coating on the autumn-planted potatoes, because what rich soil there was a-top when the stubble was ploughed for planting lies now nine inches deep, and their over-covering mould may be raw and insipid, as it is a field that we have not long had in possession, and the last owner did his farm but niggardly.

The river has sunk so much—probably from the binding-up of the mountain-springs—that I have been able to make a thorough inspection of the effect of the jetties, the strong mid-day sunlight showing minutely not only the material and make-up of the river-bed, but the very notes, too, floating in the air under the wall. I find that gravel has been scooped up somewhere above, and deposited in a fine sloping bed behind each pier, while between them the water rests so still, that, although there is a strong current outside, the dry broken twigs thrown in don't move on in the least. I long for March to come, that we may complete our work by sloping down the steep places of the bank, filling up what holes remain with pared rough turf from a neighbouring meadow, which has been only recently drained, and is covered with a coarse mat of sour tussock grass that no stock will touch. I shall so kill two birds. I shall defend my bank against the river by a tough packing of the hollows, that it will get disheartened in attempting to pick out, and I shall encourage a fresh sweet springing of the pasture. The fine new mould which was filled-in during October the angry flood made short work of when it managed to overleap the jetties. A subsequent inundation, however, was completely baffled by such packing as we did, by way of experiment, of the gaps before emptied. Once get the slope smoothed, and a fair sward upon it, and we shall have no further fear of any wash. We shall only hope that the waters will descend as thick as can be with a loamy solution from the upper country. It is very surprising to see how rapidly grass blades manage to disengage the earthy particles from the turbid sheet as it advances upon the plain. I watched it rush angrily—a very mud soup—up a narrow hollow in the field, where a fence had once stood; but before it had travelled two hundred yards, the element was returning fast to its normal limpid condition, and became clear as crystal when it with difficulty had mounted some higher portion of the meadow.

The purchase of the mare and horse in Wales has made us very forward to our work. It is grand to have had the stubbles all deeply ploughed a month since, so that the rocky soil is getting as friable as can be. For man-gold-wurtzel I shall only work the ground now with a scarifier until it is opened with a double mould-board plough, for the reception of good soapy muck from our deepest foldyard, which is hollowed out of the rock. I saw the juice running out of the carts just now, as mellow and deep-tinted as October ale. We have so much stock in the folds and boxes, that in a month's time it will be full-stuffed again. A couple of acres of cabbage having been planted during my absence in the autumn without the land having, as it should have done, a dressing of manure, the bailiff considering the bed strong enough. I

shall try the effect of sewage, and give each plant a cup of strong drink when the spring comes in, for our liquid-manure tank has long been brimful.

What a pleasant occupation it is getting the lambing-yard ready! We shall this year make it occupy the half of a new stackyard we have established near the bailiff's bedroom window. Having hollowed a long strip about four yards' wide to the depth of 18 inches, and filled the trench with sifted dry wood and coal-ashes, we shall build a roof of straw to it and a back of wattled hurdles, along which, on the inside, deep rain-spouts will be fixed by way of mangers. We so manage to make a great quantity of "artificial" to drill in with the swedes. I have some dozen porkers similarly bedded. The hen and duck houses are all laid with sawdust, with which, too, the fattening cattle are bedded. It does not give half the trouble that straw does in the cleaning out, and goes much further; while we have ample use for the sheaves, there being a good part of them cut-up with hay and pulped swedes; much, too, being strewn under the terribly high-bred pets of the establishment. There is a special virtue in the smell of the pine-wood sawdust: it keeps off insect plagues, I think. Talking of pine-wood reminds one of larch. At one corner of the farm there rises at the base of a sloping arable field a conical hillock rounded on three sides, upon the fourth attaching to and embedded in the field. What it ever can have been quite puzzles us. It might, from its shape, have been a tumulus. The surrounding ground is high, and a hundred feet above the level of a brook, which runs at the bottom a meadow's width below. Rather a distinguished geologist holds that over this elevated table-land (it was not elevated then, but is supposed to owe its rise to volcanic action) once a river ran, disembodying at the point where the conical mound rises, and which, therefore, may be simply an accumulated deposit of drift. Some party, in old time, perchance, had a jetty there. Anyhow, this hillock is so steep that we cannot plough its sides; and to plant it would be to throw an undue shade on the adjacent corn-field. In our despair, certainly, last year we did plant it, and in greater despair the plantation died; so this year, as the steep sides look to the east, south, and west, the frigid north wind being well shielded off by the rising back-ground, so that it is a hot quarter rather than otherwise, I propose to begin at the bottom, and dig or break it up with picks to a considerable depth, after a terrace-fashion (as we see the hill-sides treated along the Rhine). The outside edge of the step shall be higher, or, in other words, the steps shall slope back from the outside edge at an angle of 20 deg. downwards, so that, when rain falls, it shall soak into the sandy rock and soil at the hollows of the staircase, instead of washing off the lips of the steps. Once deeply worked, I expect and hope that we may make a plot, now useless except as a rabbit-lair, of garden-value, for the raising of cabbage-plants, &c. At least, it is worth the experiment; while our occupation will be as interesting as healthful.

Having occasion to open a quarry for the purpose of making the river jetties, I observed, four feet under the surface soil—the hole having been worked into a slope—a regular incrustation of lime, which seemed to have filtered through, and had gathered in cakes about the layers

of stone. There is a certain element of lime in the sandstone itself, which fizzies on the application of spirit of salt, but the stuff which attracted my attention is clearly an infiltrated incrustation from the surface, which I understand was dressed thickly with a compost of earth and lime some fifteen years ago. I know that lime will bury itself in time, but I had no idea that it was so persevering a borer as this.

What an easy thing it is to do good! Would that we were always so inclined! Having been shown by the enterprising agent of some ducal estates in Suffolk a comfortable labourers' reading-room erected at different points of this property, I borrowed the idea, and by the expenditure of a few shillings boarded off half a garden-house, which has temporarily been wainscotted with matting, and is warmed with an old laundry stove. A table is erected at one corner, with a book-shelf above, and a paraffin lamp gives light. When I first broached

the idea all the villagers held off; but any night you may turn in now, between seven and half-past nine, you will find the place crowded. Each subscriber pays a penny a week. The room is managed by a chairman (elected weekly by themselves) and a committee. They are supplied with excellent coffee, at a halfpenny per large cup. The profit on the sale of coffee buys them a weekly paper; beside which, between us neighbours, we put in our own half-dozen various prints every week, and they have a small select library on the shelf. They are allowed to smoke. I am delighted at the success of the plan. Whenever you may turn in you will find a number occupied with the books, and who don't care to talk. I mention these particulars, as it is so cheap a mode of doing positive good. The plan, as I have said, I borrowed from what I saw in Suffolk. My sands are run, and so good-by.

VIGIL.

THE HERDS OF GREAT BRITAIN.

CHAPTER LIX.

MR. LENEY'S.

A trip to Watlingbury before the "South Eastern" Railway came into being, was a weary thing, by comparison. Now you take train at Cannon Street, alip down one side of a Sussex and Kentish triangle, instead of going round two, and reach Tonbridge in an hour. A change at Paddock Wood, and then a few miles down the Maidstone branch, brings you to Watlingbury station, which was in a state of blockade. The hopping season was just over, and a strange motley troop of Celts and Saxons with dishevelled hair, squalling babies, potato-kettles tied up in handkerchiefs, and bunches of faded hop-bines as a token of their autumn outing, struggled up to the barriers, within which the station-master was entrenched. Black eyes were rather the rule, than the exception, with the women, as they fight severely before parting; but the men don't seem "to malice each other" so much. In the midst of an apparently severe tourney we have seen them suddenly relent, perform a sort of wild Pyrrhic dance, and give the kiss of peace.

Mr. Leney, who lives at The Orpines, a pretty spot which Shorthorn men know well, about half a mile from the station, has sometimes a thousand of them at work on his 140 acres of hop yards, which are principally planted with Goldings. The poles are creosoted at the bottom, which generally is in better preservation than the top when their natural term of fourteen or fifteen years is completed. The Goldings, which are grown here and at Yalding, require poles of 16 to 18 feet. The bines just reach the top of the pole, and if they were to lean over much they would lose quality or become "housey," as it is called. The Grapes require an intermediate pole of from 12 to 14 feet; and the Jones's, which don't climb, one of 2 or 3 feet less. These latter do not produce the same quantity, and are grown more in the Weald of Kent and Sussex. The withered bines have their uses, and not only furnish litter and thatch, but serve to put over the mangold "clamp." The whole of the 840 acres which Mr. Leney has in hand are upon the hazel mould, with Kentish ragstone as the subsoil, and 80 acres of it are in permanent grass. Swedes succeed trifolium, and are used with cut straw and malt-dust for cattle in the winter; and the mangolds are Sutton's Globe and

Long Red and Yellow, following rye, which is cut sometimes at a five-foot growth on May 1st.

We have our first view of the herd in a meadow by the side of the Medway, where four lots from Mr. Fowler's sale are undergoing quarantine. The white nine-year-old Seraph, of the Sweetheart tribe, retains much of the massiveness which enabled her to win three cups in her day. Near her are the two roans Nymphalin and Pipalce, own sisters, by Bull's Run, from Sylphide; and the big, deep-fleshed heifer Knightley's Grand Duchess, by Fourth Grand Duke, from Nymphalin, still nineteen days short of two years, and a proof of what "Bates upon Fawley" can effect. She was a 210-guinea purchase, and Mr. Leney and Mr. Sheldon fought in their best style. The wind nipped so shrewdly that an adjournment was made to a long shed, and the biddings gained spirit by the move.

A few years ago Mr. Leney merely bought calves to make into steers, with which he won three silver cups at the Ashford Fat Show and two at the Maidstone. In 1862 he desired something better, and bought sixteen of Mr. Golding's, of Hunton, in a lot. Clifford by Fourth Duke of Thorndale, from a cow of Mr. Fawkes's blood, bought at Mr. Hales' sale was used for three seasons, and was then replaced by Mr. Harrison's Waterloo Duke. With him came May Queen and Lady Blanche of the Anna by Pilot and Blanchett of the Sockburn Sall tribe; and, at Mr. Langston's sale he could not resist Columbine of the Chaff tribe and two or three others. At Mr. Tanqueray's, he still followed the Fourth Duke of Thorndale blood, and bought Second Kentish Gwynne, Charming by Mameluke, and her four daughters by Fourth Duke of Thorndale, her grand daughter and old Sweetbriar, also of the Chamer tribe. The May Morning of '67, in Kent, did not lack some of his cheerful, sonorous bids; and, Second Lord Oxford 200 gs. ("the lame bull" of the Willis's Rooms day), and Ninth Grand Duchess, a doubtful breeder, were added to his store. The cow was condemned to salts and starvation at Starve Crow, and Second Lord Oxford caught her at last, and she calved Grand Duke of Kent. Maiden hair of the Rosy tribe (80 gs.), was another Betts' purchase, and on the following day Mr. Leney returned from Mr. M'Intosh's with Fawley Third (190 gs.), a daughter of

Coquelecot; which, although only four years old, has already bred three calves. Columbia of the Walnut tribe, at the Marquis of Exeter's, and Knightley (100 gs.), a Charmer bull, followed. The Columbia purchase turned out so well, that her dam and sister recently came to bear her company from Mr. Sheldon's. Princess Alice of the Cold Cream sort (180 gs.) fell to Mr. Leney's lot after some very decisive biddings at the Royal Home Farm sale in '67, and then the party adjourned to a Windsor hotel, to discuss the lots of "Sheldon of Geneva, Illinois." It was here that the "short, sharp, and decisive" style came out in its highest force, and Seventh Duchess of Geneva (700 gs.); Fourth Maid of Oxford (800 gs.), a doubtful breeder; and Seventh Maid of Oxford (360 gs.)—all departed to Orpines. Well might Mr. Leney's opponents say: "*You travel so fast, we could hardly keep round.*" Two Sweethearts at Lord Dartmouth's, Garland at Mr. Gilbert Wood's, Wild Duchess (105 gs.) at Lord Penrhyn's, Ruby (60 gs.) and Rarity (71 gs.) of the Charmer sort, at Mr. Chaydon's; Maryland (90 gs.) of the Rosy tribe (a pure Knightley), and Spangle (160 gs.), of the Sweetheart tribe, &c., have been added since then. At present the herd contains six Duchesses, five Oxfords, fourteen Charmers, eight Sweethearts, seven Rosys, three Walnuts, two Gwynnes, two Wild Eyes, two Lilies, three Chaffs, four Lucy Longs, two Surmises, one Cold Cream, and six Garlands.

In May last the herd was 120 strong, and Mr. Leney tried the experiment of a draft sale. The stock sold did not average more than eleven months, and the 19 males (including the 500-guinea bull) averaged 256 9s., and the 23 females 270 5s. 3d. There were no Duchess or Oxford females in the sale, and Messrs. Foster and Moore took the three Charmers to Cumberland at 200 guineas, 235 guineas, and 175 guineas. The 500-guinea Grand Duke of Kent, by Lord Oxford 2nd, from Ninth Grand Duchess, was not delivered, owing to illness, and Lady Oxford (100 guineas), from Columbia, departed for America. Bates and Knightley are the tribes on which Mr. Leney takes his stand, with a strong feeling for the Jennies. His plan is to breed from them early, and let them suckle their own calves. He never prepares them for Shows; but he has taken Smithfield Club honours with his steers, to wit, a second with one not of his own breeding, in 1865, and a first the next year with one of his own Cliffords.

The sale-meadow is a very pretty one, close to the house, and half-flanked by shrubberies. You look right up the vale of the Medway, and within a mile or two are the woods of Mereworth Castle, where Lord Falmouth has his residence for the greater part of the year. His lordship's breeding paddocks are there, with Queen Bertha, Hurricane, and Flax as their leading matrons; and Kingscraft, Atalantis, Gertrude, and Guy Dayrell have been no unworthy scions of the '67 foal-crop.

Most of Mr. Leney's large fields are furnished with sheds facing the south, for the sake of isolation in case of any disease. They are all built of wood, and roofed with felt, so as to keep up an equable temperature in summer and winter. Those in the park, near Wateringbury Place, shelter a large number of hoppers during the season; they witness strange gambols by day, and stranger when the wild revellers "dance by the light of the moon." The Park is one of the principal cow meadows, and we found there quite a parliament of ladies, headed by Chorus 1st by Fourth Duke of Thorndale, of the Charmer sort, a thick roan. There is a good deal of gaiety about the American Maid, or Fourth Maid of Oxford by Imperial Oxford, and her loin is worthy of note, while 7th Maid of Oxford is remarkably nice in her under line, but a little slack behind. Jenny 8th

by Clifford has much of the look of old Moss Rose, and a very nice roan, if she was a little more filled up behind the shoulder. There is no more promising milker in the herd than the sweet-headed Jenny 12th, but she made a *faux pas*, and had a calf at 21 months. There, too, are Columbine, a fine red, of the Chaff sort, Columbia, and Miss Knightley, own sisters, by Sir Charles, May Queen, with the old fashioned head, and dating back through Anna by Pilot and Fawley 8th to Fawley by Little John. Grand Duchess 9th, a 210-guinea purchase at Mr. Betts' is all hillocks now, and one horn curls round almost into her eye; and old white Maryland, one of the last that Sir Charles Knightley bred, is also among the has-beens.

Miss Thornton, an old white, by Welcome Guest (18497), from the Clifton pastures, is the only "bit of Booth" on the ground. The two-year Rarity 2nd, a heifer of great substance and gaiety, and Garland 5th, from old Sabrina, a red, with a very neat breast, are near her, and so is Twin Duchess 4th, with a head to model from. The massive Seventh Duchess of Geneva, a grand massive white with that remarkably prominent Bates nostril, is the grand centre-piece of all, and Mr. Leney tells how, although sorely tempted, he refused 1,500 gs. for her and her heifer-calf by Fifteenth Grand Duke on his return from Mr. Bowly's sale. Oxford Fawley is small, and with a very nice head; but Sweetbriar has got a game leg in the tenth year of her age, and has sadly failed in consequence. Lord Oxford 2nd knocked her over, but she bore him a good bull-calf notwithstanding.

Duchess of Oxford, from Maid of Oxford 7th, is a gay little occupant of one of the calf partitions in the shed, and her dam is one of the seven selected as an illustration for the last volume of the Herd Book. At the other end we found Grand Duke of Kent growing into a lusty well-fleshed bull, and quite recovered, except in his sprawly mode of walking, from his recent illness. The shed is rather rich in calves, a good white heifer by Fifteenth Grand Duke from Seventh Duchess of Geneva, and his half-sister from Spangle; two bull-calves, one a Sir Charles Knightley from Dew of the Valley, with most beautiful bone; and the other by Lord Oxford 2nd from Maiden-hair. Mr. Leney draws attention to Seventh Maid of Oxford's calf by Fifteenth Grand Duke, which has fallen a white, while its predecessor by the same bull was a red.

Princess Alice, a fine rich-haired calf, going back to Cold Cream, is an appropriate preface to Lord Oxford 2nd, a big white bull, with a grand head and forehead, but gouty in one leg. He is by Fourth Duke of Thorndale out of Oxford 18th, and had a reserve on him of 200 gs. at Mr. Betts'. It was thought that he would never get up after Mr. Leney paid for him; but still he is quite able to bull the young heifers. His length is very good, and his hair remarkably silky, and there are several good roans among his heifers. Knightley by Barleycorn from Columbine is a pure Charmer bull of a peculiar stamp, such as we never met with before. He is thick, level, and deep-fleshed, with a peculiar crest and short, shaggy head, which, with rather tucked-up horns, somewhat detracts from his gaiety. His son—the two-year-old Sir Charles Knightley—has a much nicer head, and just one cross of Fourth Duke of Thorndale in his Charmer escutcheon; but he has not got his growth yet, although he has a lusty promise. Fifteenth Grand Duke by Fourth Grand Duke out of Twelfth Grand Duchess by Imperial Oxford has no trace left of his lameness; but he is rather small, with capital thick thighs, and a nice eye and crest. He was bred by Mr. Bolden; then Mr. Tanqueray bought him; and he came into Mr. Leney's hands with some Charmers and Gwynnes in cattle-plague time. He is a deep-fleshed one, and likely to get them with good steaks

and boiled beef as well—that delight of “La Belle France.” Mr. Leney has thus Oxford, Charmer, and Duchess blood at hand for a cross; and so far this year he has had eight heifer and three bull calves.

Third Countess of Wateringbury by Lord Oxford 2nd from Chorus 2nd and 2nd Countess of Wetherby by Lord Oxford greeted us as we left the yard for the park, which lies about half a mile away. We found there Jenny 9th and 12th, both by Clifford; the long, low, and thick Sultana, which goes back like the Jennies to Matilda by Highflyer; Sharpe's Pauline; Ninth Grand Duchess, in-calf from July; Columbine, with fine depth of rib, bred by Sir Charles Knightley, and one of his last; and Chorus 2nd, big and broad across the back. Something brings back the conversation to Fourth Maid of Oxford, and we learn that she was a perfect martyr. Still 300 gs. worth of American stock was not to become mere butcher's meat without a struggle. She sometimes walked fifteen miles a day, and finally worked six hours a day in a pugmill, preparing clay for bricks, which combined processes took nearly 30 stone off her.

We adjourn to the meadow near the east houses, where many of the older cows are grazing. One of them, Second Kentish Gwynne, a thick, white, and rather

cushioned behind, once shared the honours of penal servitude with the Fourth Maid. There, too, is the shadow of old Sabrina, and with her that deep good cow Sultana 2nd. So are Ruby, the dam of Rarity, Maiden-hair, and Chorus 2nd, which figures with her calf Countess of Wateringbury in the last volume of the Herd Book, Spangle, of the Sweetheart tribe, and Columbine, a low thick cow of the Chaff; and Fawaley 3rd (190 gs.) soon, makes you ask her name and belongings. The eleven-year-old Jenny has a true Yorkshire milking character about her, and we are not surprised to hear that she is good for six to seven gallons per day in the height of the grass. “The grand tour” ends in a yard hard by Mr. Leney's own brewery, where we find Princess Alice, a gay and pretty heifer with Cold Cream and British Prince in her veins. Old red Charming is there too, with that length and quality which first charmed the ring when she was sold at Mr. Adkins' sale in '50, and induced Mr. Leney to buy her in a lot of eight from Mr. Tanqueray's; and with Seventh Maid of Oxford, another picture elect, we closed our note-book in Kent, and bid good-bye to the most spirited Shorthorn buyer that it ever possessed.

H. H. D.

THE YIELD IN 1869.

These advices were presented to the *Mark Lane Express*. The analysis, or condensed statement of the results, will be found in the annexed table, which, so far as the returns will admit, gives an exact view in a few lines of the average yield of the different cereal crops. We say, so far as the returns will admit, for we still have to complain that so many of our correspondents continue to comprise the classification of a large portion of their returns under the indefinite term “under average,” which may mean a trifling or a large deficiency. We believe, in fact, that in numerous cases those words do represent a much larger per-centage than their use would imply; but which it would not become us to act upon. We have placed this matter in the foreground of our table in the hope that our corresponding friends may take it into consideration before another season comes round for sending us their reports. The following is a summary of the results of the late harvest of cereals:

Classification.	Malt.	Barley.	Oats.	Beans.	Peas.
Failure and three-fourths under average	1	...	3	32	42
Two-thirds under average	...	...	...	10	46
Half	3	10	7	30	...
One-third	27	31	18	19	65
One-fourth	25	16	4	11	28
One-fifth	3	20	...	1	1
One-sixth	5	1	8	...	...
Under average	231	199	210	158	120
Average	183	185	209	167	98
Over average	27	27	22	18	9
One-sixth over average	...	...	...	...	...
One-fifth	...	...	...	2	...
One-fourth	3	...	...	4	1
One-third	...	...	...	9	...
One-half	3	...	...	1	...
Two-thirds	...	...	...	...	...
Totals	511	489	491	452	408

The season of 1868-9 has been a very different one from that of 1867-8 in many important respects. The

autumnal sowing was effected under favourable circumstances, but the spring was unpropitious, and a wet March was against the wheat crop, as well as every other cereal. The summer, too, was ungenial, and two or three frosty nights at the latter end of June, when the wheat was on the bloom, inflicted considerable injury on that crop. The atmospheric changes continued unfavourable until July, when the weather cleared, and we had several weeks of ripening weather, which lasted until a large proportion of the grain crops were matured and housed in excellent condition. But the mischief was past cure, and the different cereal crops came light to hand, promising a very different result, for the wheat especially, from that of the previous harvest. It is true the wheat crop of 1868 was an exceptional one in the extraordinary yield, both in weight and measure and the unusually early period of its ripening. So low, too, were the stocks reduced, as well on the Continent as in the United Kingdom, that, early as the new crop came upon the market, it was at once made available for consumption, which was from a month to six weeks earlier than usual. This extended the period for which it was required to supply the wants of the country to an equal extent, and when the recent harvest commenced there certainly was not more than an average stock of old wheat, if so much, in the hands of the growers.

The farmers generally were disappointed in the result of the wheat crop. There was no deficiency in the number of plants, the ground being well covered. But as soon as the harvest commenced the weight of the sheaves, in a large majority of cases, told too plainly of a deficiency in the yield; and our analysis of the returns sent us explains the average result. As compared with the crop of 1868 the difference is enormous. On a reference to the tables of last year, we find that out of 528 returns there are only 18 under average, whilst of the remaining 515, 381 were above it. On the contrary, this year the proportions are 295 under and 216 an average and above it, the number of these latter being only 82.

With such a deficiency as these figures indicate the growers had reason to expect a corresponding price for their grain, and here is the most serious disappointment they have had to meet. If we compare the state of the markets in those two seasons we shall find a most extraordinary discrepancy. With the largest crop ever harvested that of 1868, the year closed with a six weeks' average of 50s. 7d. With a crop deficient to the extent of at least one-fifth, and probably one-fourth, the average struck at the same period of the year is only 44s. 7d., and prices have ever since suffered a further decline. This state of things is owing to the large arrivals during the last three months of the year and up to the present time, with a knowledge that a fleet comprising several hundreds of grain-laden vessels are afloat, destined for the United Kingdom, as the only market open to them at present.

The barley crop is rather less unfavourable than that of 1868, but is still far from being a good one. We show 277 returns under, and 212 an average and above it. Last year there were 332 under, and only 171 an average and over. In both seasons there has been a large proportion of the produce thin and of a dark colour unfit for malting purposes. The deficiency has been supplied by importations to a certain extent, but still more by the use of sugar, which is now largely employed by the public brewers, to enable them to meet the increased and increasing demand for malt liquors. But for the large importations of foreign barley, a considerable proportion of which was fit for malting, the price of this grain would have ruled very high. As it is, with a foreign supply last year of about seven million hundred-weights, the last six weeks' average is only 85s. 11d. per qr., against 48s. 10d. at the same period of last year—the highest price being 39s. per qr. We think the crop cannot be taken at more than three-fourths of an average—probably three-fifths, the quality being much inferior to that of last year, owing to the sudden setting in of the

dry weather when the plant was not forward enough to withstand it.

The result of the oat crop has much surprised us, having previously from many quarters had favourable accounts. There are 250 under, and 241 averages, or above, against 387 under and 108 average and over. Some of the returns speak of a very thin quality, but generally both quality and condition good. The price, however, of this grain is quite out of proportion with the deficient crop. The imports are large, and have driven the quotations for the six weeks' average at the end of January down to 20s. 10d. per qr., against 27s. 7d. at the same period last year, the highest price for potato oats being quoted at 23s. The yield of this grain cannot be estimated at more than three-fifths of an average; and we fear some of our correspondents will think even this estimate too high.

With respect to the bean crop, we remark that in numerous cases the returns include two results, one for winter the other for spring sown. The former are invariably good, and the latter as invariably bad, and these of course being taken separately, increase the number of entries in our summary. As they appear, there are 261 under average, and 191 average and over it; but amongst the former there are 32 entire failures, and 71 ranging from one-fifth to two-thirds deficiency, and we fear we shall estimate the crop too high at three-fifths of an average.

The pea crop is, if anything, worse than the bean, there being 300 under average, and 108 averages and over. Amongst the former there are 42 cases of failure, 46 from one-half to two-thirds, 65 one-third, and 26 one-fourth deficiency. This crop, chiefly the late-sown, was greatly injured by the fly; the early-sown, like the beans, being generally good. Taking all into account, we cannot estimate the crop at more than half an average one. Owing to the large importations, the price of both beans and peas is low, considering the smallness of the returns.

THE REPEAL OF THE MALT TAX AND THE USE OF SEMI-MALTED GRAIN.

After the reading of Mr. ANDREW JOHNSTON'S paper at the Essex Chamber of Agriculture, the following discussion took place:

Mr. SEAMAN said so long as the farmer was prohibited using the produce of his own farm as he pleased, so long there would be adulteration of manure and cake. It must be clear to any one that there would be a great demand for manures and feeding stuffs when the food of animals was really dearer than the food of man, the best linseed cake being £13 10s. per ton, and wheat and barley only £8 per ton. And he believed the greatest culprits in this matter were the Houses of Parliament, who prevented the farmer using his own produce as he liked. They had been told by Mr. Lawes, who undertook to conduct experiments for the Board of Trade in 1865, that malted grain was superior to the grain from which it was produced for feeding animals upon, and it might be recollected during the discussions in Parliament, in which Mr. Du Cane, late member for North Essex, took a prominent part, that he (Mr. Seaman) threw out a challenge of £500 that he could produce more mutton in a given time by using malt as he should direct (semi-malted grain) than Mr. Lawes could produce from double the quantity of raw material with double the number of sheep. Mr. Du Cane asked the Government to accept this challenge, but it did not suit their purpose. Mr. Lawes, however, used the grain as for making beer, instead of using it before it went to the kiln, which was the proper stage at which it ought to be used for feeding animals. He had a sample (which he forwarded to the chairman) at the stage at which it should be used, but unfortunately the excise were

just as strict in regard to it at that stage as at the full stage of malting. He was in a position to prove that 14lbs. of that grain per week, with half a peck of turnips daily, and straw chaff, would produce 3lbs. of mutton, at a cost of 1s. per stone (and he would leave them to guess what was the value of 3lbs. of mutton), while the best linseed cake, which cost £13 10s. per ton, for 12 weeks, would not produce more than 2lbs. of mutton per week, so that actually they could get more mutton by using a shillingworth of this semi-malted grain than they could by using eighteenthpennyworth of linseed cake. He also spoke of this semi-malted grain as a very healthy article of diet (and being a veterinary surgeon he should be an authority).

Colonel BRISE (the Chairman): Excuse me, but how many hours has this grain been steeped?

Mr. SEAMAN replied that it had been steeped 48 hours, but it took 10 days to arrive at that stage. He urged also that this prohibition by the excise caused adulteration of manures, for if farmers were allowed to use grown maize, barley, or wheat, it was well known they would have most excellent manure. He saw a gentleman in that room who in 1865, when legs of mutton were worth 1s. per pound, was producing 3lbs. of mutton upon each sheep per week with nothing but grown wheat and barley, and he would undertake that cattle, however poor, if they were healthy, could be fed up in eight weeks upon his principle of using semi-malted grain, if they could have enough to eat, and there was not the fear in using this that there was in using other articles. It was both exceed-

ingly nutritious and perfectly harmless, and that was what they wanted.

Mr. JOHNSTON : It is illegal in the present state of the law to make use of this article?

Mr. SEAMAN : Yes, the exciseman would prevent you making use of it.

Mr. JOHNSTON : Are you sure there is not an exciseman present? If there is he will be down upon us.

Mr. CLAYDEN said that Mr. Cornell was feeding 500 sheep upon this article during the recent great scarcity of food, but when it became known he was prevented using it further. If the law could be altered in this respect it would greatly prevent the adulteration of feeding stuffs.

It was here mentioned that Mr. Seaman had written to the Board of Inland Revenue asking for permission for farmers to prepare this grain, but they replied that they were of opinion that a compliance would involve a risk to the revenue which would be greater than they would be justified in incurring.

Mr. WADE suggested that if Chambers of Agriculture would direct their attention to securing such an alteration of the law as would enable farmers to make and use this semi-malted grain they would be likely to succeed, if they would stop there, but when the effort was associated with the repeal of the malt-tax they would agitate at great disadvantage; and it was impolitic to defer such a wholesome result until it could be effected by the repeal of the malt-tax. If the former case was put before parliament it would obviously so just that permission would be given. The malt-tax was based upon financial considerations with reference to the manufacture of spirits and beer, but had no reference whatever to the feeding of animals.

The CHAIRMAN : A farmer is permitted to use this if he mixes it with cake, is he not?

Mr. CLAYDEN said the chairman was doubtless alluding to "Gladstone's mixture."

Mr. CHARLES SPENCER said there was never a better time than the present to agitate for the repeal of the malt-tax, but as to Mr. Wade's suggestion of getting permission to use this sprouted grain, if they got that farmers would soon find their barrels filled with beer (No, no, and laughter). He spoke both as a maltster and a farmer, and they would find this an insuperable objection. But it was very easily got rid of if they would not tax malt at all, and tax the beer instead.

Mr. BARNARD said they must all feel greatly indebted for the able and practical paper which Mr. Johnston had read, and they ought to come to some practical resolution upon the subject. He proposed a resolution, which he said was on the suggestion of Mr. Johnston, asking the meeting to recommend that there should be an official person appointed to make analyses of food and manures for the members of this chamber.

Mr. JOHNSTON said he was a little taken by surprise by Mr. Barnard's resolution, because it was not the one he suggested. What he suggested was that a branch or committee of the Essex Agricultural Society should be asked to give their attention to this subject.

Mr. BARNARD said his only desire was that something should be done, either by this Chamber or the Essex Agricultural Society, to protect their members against adulteration in cattle food and manures.

Mr. JOHNSTON : The resolution suggested was something after this form—"That in the opinion of this meeting the formation of county associations, or committees of the existing county agricultural societies, for the purpose of testing by analysis the manures and cake purchased by their members, is the best method of preventing adulteration."

Mr. BARNARD said he was prepared to move this resolution.

Mr. JOHNSTON : I will second it for the purpose of discussion.

Mr. CLAYDEN pointed out the advantage to farmers of becoming members of the Royal Agricultural Society. Those who joined would be well repaid, because Professor Voelcker analysed for that society, and always did his work fearlessly and well. The greatest guarantee farmers in that neighbourhood had always felt was in purchasing their cake and manure from good and respectable man. Mr. Johnston had said that was not at all times a guarantee, but they had found it so. He believed all the manures sold by substantial men in this locality were thoroughly honest. Professor Voelcker, indeed, had returned some of it as being worth £1 10s. more than it was sold at. They could not go into any agricultural market,

however, without seeing a large number of vendors of manure, a good deal of which was not what it should be. If gentlemen joined the Royal Agricultural Society they had at once the opportunity of having it tested. Mr. Seaman had alluded to the germination of their own grain. That would be a most practical and good thing, for there was no article which would be of greater use in making beef. The farmer could prepare this kind of food without expense upon his own premises, and he (Mr. Clayden) had observed that the alteration made in cattle after taking it for only two or three weeks was most extraordinary. It was good alike for horses and sheep. It had been used on farms in this neighbourhood to a very great extent.

Mr. SEAMAN : As much as twenty sacks a week has been used on many farms.

Mr. CLAYDEN : When corn is cheap, of course it is an exceedingly valuable adjunct. I only trust some means will be devised by which farmers may be enabled to use this kind of food. Nothing could more effectually obviate the adulteration of feeding stuffs.

The CHAIRMAN said it seemed to him that the whole pith of the resolution was, after all, that the remedy was in their own hands. Men of experience had very little to fear in making their purchases of cake and manure, while those who were not sufficiently experienced, if they were members of the Royal Agricultural Society, had their remedy in being able to submit articles for analysis to Professor Voelcker. For the benefit of those gentlemen who were not members of the Royal Agricultural Society it was suggested generally, by this resolution, that some steps should be taken by county associations to form a committee, which should protect them in like manner. He did not think Mr. Johnston recommended any further legislation on this question, and he quite agreed with him on that point. They had a great deal of interesting discussion in the House of Commons last session on the Adulteration of Seeds' Bill. When that bill first came into the House, he thought very little of it. He thought then, as he did now, that the remedy was in the hands of the farmers. However, he altered his opinion after hearing the evidence of the committee. He believed that evidence was of great advantage to the agricultural community generally, and he was not at all sure if a committee of the House of Commons should be appointed to inquire into the subject of manures but that they would hear many things to astonish them, and that would very likely be of great benefit to them. But what surprised him most was the source from which the Adulteration of Seeds' Bill was promoted. The promoters of the bill turned out to be seedsmen themselves, and he (Colonel Brise) certainly had this opinion, that if the manure manufacturers were as conscience-stricken as the seedsmen showed themselves to be, and if they thought it was high time to open their hearts and tell the agriculturists all the tricks and frauds they had been practising upon them, and wished to have any legislation upon the subject, the House of Commons would be happy to get through any bill they desired to pass; otherwise, he confessed he thought legislation had no business to interfere.

The resolution was then submitted to the meeting, and carried.

Mr. CLAYDEN said he felt he was in order in moving another resolution—namely, "That in the opinion of this meeting it is very important farmers should be allowed to germinate their grain for feeding their own animals, as they feel it would in a great degree obviate the adulteration of feeding stuffs, and at the same time produce meat at a less cost to the consumer; and that efforts should be made by the Chamber of Agriculture to get an alteration of the law in that respect." It was perhaps not generally known throughout the kingdom, or even throughout the county of Essex, as it was in that neighbourhood, that germinated grain was an exceedingly valuable and healthy article of food for animals. The article was at their own doors, and while, unlike some feeding stuffs, it was not dangerous to animal life, it would be much cheaper and produce more meat.

Mr. PORTWAX said he would be happy to second the resolution which Mr. Clayden had moved. It was a most important thing that farmers should be allowed to use germinated grain. He agreed with the previous speaker that it did not affect the animal in any injurious way, whereas if they gave a little overdose of oilcake or a few beans too many great harm was fre-

quently produced. As an illustration of the value of germinated grain he might mention that on one occasion he had a horse which was said to be rotten and good for nothing, and which was wasting away very rapidly. The animal was attended by two or three veterinary surgeons, and at last, after they had given the case up, he (Mr. Portway) said: "Now I'll try my remedy," which was to give the horse steeped barley, like that shown to the meeting by Mr. Seaman, and that horse within three months was as fat and as well as a mole, and within five months he was offered £100 for it.

Mr. WADE wished to suggest a means which he thought would tend to carry out the object which Mr. Clayden and other gentlemen had in view. If Mr. Clayden would only agitate this question with half the energy that he advocated the repeal of the malt-tax, and only let that question alone for a little time, his efforts would doubtless soon be crowned with success.

Mr. BARNARD said legislation was wanted which would permit the farmer to use barley in the condition referred to with impunity.

Mr. JOHNSTON: In practice the difficulties either are, or are said to be, insuperable. I think Government officials are very apt to make insuperable difficulties when there are no insuperable difficulties at all; but the difficulty in this case is said to be that of drawing a distinction between steeping barley and making malt. If it were not for that I think no Government or member of the House of Commons or the House of Lords, or anybody else, could for a moment resist such an obviously just demand on the part of the agriculturist as that he should be allowed to use the product of his own farm in his own way, and it is the very ease and facility with which such a demand, on the first blush of the thing, ought to be granted that makes me think there must be serious difficulties in the way of granting it without in some measure laying the Excise open to fraud in the matter of malt. I am rather disposed to think that instead of drawing back, as Mr. Wade suggests, from agitating for the repeal of the malt tax, the desirability of having this germinated barley ought to unite us in a more earnest endeavour to get rid of that law. But some things are necessary before we should have any chance of this. In the first place we must be able to point out to Government some way out of the difficulty

which is always thrown in our teeth about that unfortunate six millions of money which the malt tax brings in. We must make up our minds tolerably clearly how we are to supply that. I believe that reductions of the malt tax short of total abolition will be of very little use, but I think we ought to demand that a portion of every surplus—and the Government seems to be producing surpluses as fast as a hen can lay eggs—should be devoted to reducing that duty, not as an end of the matter, but with the view ultimately of getting rid of it altogether. And then I would observe we must have more unanimity and strength in the agitation. I have been struck with the fact that although I am a malt tax repealer, and although I made the subject a prominent point in my address to the electors of South Essex, I have not had a single word said to me by any farmer or anybody else commending me for the side I take, or showing any interest in the matter whatever. I don't mean to say they do not feel it, but, apparently, they don't feel it sufficiently to make it worth their while to communicate with their representative. I have had objections raised by people to my putting the malt tax in my address, and I was told by one of my own party that it would lose me a great many votes, but I have never had any commendation or credit for putting it in. Then another important matter is, by all means not to make this a party question. I was very much afraid that it was so regarded in some quarters, when the chairman of an anti-malt tax meeting in my district, speaking in reply to a vote of thanks, said he was always glad to take part in that or any other good Tory movement. Nothing could be worse than to treat the question in that way, because if you shake the malt tax in the face of one side and declare that it is rather a good move on the other, it is rather like shaking a red flag in the face of a bull, and they don't like it. I should like to see this question kept wholly free from party politics, and therefore I made it a prominent point in my address, because I suppose the supporters of the abolition of the malt tax are rather more on the other side of the house. I am glad to think no party considerations have weighed with me, and I hope they will weigh with nobody else when the time comes for making a strong pull, a long pull, and a pull altogether.

The resolution was carried unanimously.

THE MIDLAND FARMERS' CLUB.

The sixth annual general meeting of the members was held at Nock's Hotel, Birmingham, the president, Mr. G. A. May, in the chair.

In the absence of Mr. J. B. Lythall, through illness, the report was read by his brother, Mr. A. LYTHALL. It stated that, owing to the diminished source of income and accumulated deficiencies in past years, the accounts showed an adverse balance of £48 3s. 6d. Nine new members had joined during the year, and the Club had lost by death and resignations 22, leaving the number now on the books 214. The committee regretted to state that the subscriptions now in arrear amounted to the large sum of £71 ls.

Mr. T. B. WRIGHT, in moving the adoption of the report, regretted that the financial statement was not more satisfactory; but he hoped the arrears of subscriptions would soon be paid up. When the Club was commenced, he anticipated that it would number many more members than it now did. The proposal for its establishment was made by Mr. Alderman Wiggins (a gentleman who took much interest in agricultural matters), and was supported by Mr. R. C. Chawner and others, the impression being that the commercial gentlemen of the town would join in large numbers, since many of them were interested, from early association, in farming pursuits, whilst all were concerned in them from a common ground of interest; but he was sorry to say that this had not been the case to the extent which was expected. The promoters of the Club thought—and the result had shown the impression to be correct—that a farmers' club, the members of which did not come exclusively from any one locality, would stand in a very independent and useful position. He was sure that all who had joined the Club had received money's worth for the subscriptions in the valuable papers which had been read, and

the discussions which had taken place on various important subjects.

Mr. J. H. LEE seconded the motion, which was passed.

The PRESIDENT said he quite agreed with what Mr. Wright had said in regard to the club being made the vehicle for conveying much valuable information, not only to farmers, but to all classes. Although it had been said by many that they conducted their business in an ultra fashion, and that things were sometimes said which ought not to be said, he did not coincide in that opinion. It might be that there had on one or two occasions been some free expressions, as for instance on the subject of the game laws; but, a man bitten by game was like a man bitten by a dog—he was rather apt to go mad. But he was bound to say that, in regard to the general tenor of their discussions, every question which he had heard introduced before the club had been treated in a manner at once both intelligent and proper. His own term of office having expired, he begged to thank the members of the club for the kindness which had been shown to him, and to nominate Mr. William Brewster as his successor.

Mr. R. H. MASEY seconded the motion, and said he felt grateful to those gentlemen who first promoted the club, but his gratitude would be much increased if he saw a renewal of their exertions and a repetition of their attendance. He did not like a man to put his hand to the plough and then to look back; and he thought those gentlemen who had allowed their names to be placed upon the list of committees should at any rate occasionally put in an appearance. It was the commercial men who founded the club, and he hoped they would attend its meetings in augmented numbers.

Mr. J. BOWEN JONES, of Shrewsbury, read a paper "On the Relative Merits of the Four Course and other Systems of

Cropping." He said, the object of a system of cropping, as they were all aware, was to prevent that exhaustion of the soil which would arise from the elimination of its particular elements of nutrition by the growth of plants; and therefore in considering the best rotation of cropping to pursue on any sort of land, the point to arrive at was how to get the largest amount of remuneration in return, and at the same time to prevent the soil declining in its productive power. Another object must also be to increase the fertility of the soil by the judicious use of manures, and by good cultivation, &c., through which means they would insure the growth of larger crops. The nature of the soil, the climate, and situation principally, with a variety of minor circumstances, must guide them in the attempt to carry out these considerations; and although in a review of the subject it would be seen that the progress of modern times had in some degree abolished their original impotence when opposed to nature, they would still find that the quality of the soil and climate would continue to give a distinctive character to crops grown on different soils and in different districts. He proposed to divide soils into three different sections, and to consider their exigencies, as far as possible, in separate order: 1st, Heavy; 2nd, Medium, 3rd, Light Soils. The first section would include clays and very strong loams; the second, loams of a mixed character; and the third sandy loams to light sands. First, heavy soils. The strong soils were originally farmed on the principle of taking all out by continuous cropping of white and leguminous crops, and then reuscutating by means of the bare fallow. Experience showed that this description of land possessed the power of growing wheat and beans; and practice proved that, when it was foul and exhausted, fallowing, in addition to cleaning the land, increased its fertility also. Both practice and the researches of science showed that cultivation of a thorough character would develop the stores of nutritious elementary substances (contained in them in forms of combination before valueless) into active fertilisers, as well as render them accessible to the crop from the improved mechanical condition of the land. Taking these truths into consideration, how far could they improve on the old system, and in what way? The quality of the soil was such that it did not require the rest of an alternate green crop, as provided by the four-course system; the too frequent repetition of the root crop proved too expensive, from the difficulty of preparing such soil for its successful growth; and there was a practical difficulty in removing the crop sufficiently early to prevent damage to the land; while its consumption upon the land by sheep would, in its mechanical action, be an obstacle to the preparation of a good seed bed for the succeeding crop. Neither did the soil itself require chemically recouping in this way for the growth of an extra crop; so that the four-course system was not one which must always be strictly adhered to, or which must necessarily be regularly carried out on this class of soils, especially where only the ordinary appliances used in agriculture a few years back have not been improved upon. A very important consideration for the British husbandman was the production of beef and mutton as a profitable method of farming, and it remained therefore a question as to what extent the growth of root crops should be pursued in the cultivation of this description of land. This question forced itself on their minds more especially at the present time, from the relatively high price of meat and low price of cereals. Foreign supplies of grain would always prevent high prices remaining of long duration in this country, and we should have no chance against regions blessed with sunny climates, and fertile land, with, in some instances, a low rate of wages, and nominal rents, together with extending facilities for delivering their produce, except by increasing our own yield by improved culture. There could be no doubt that the manufacture of beef and mutton, combined with the production of better grain crops, was the object which must be steadily kept in view for the successful cultivation of land in this country. In the general system of cropping clay lands, although the nature of the crops was varied to suit the circumstances of different localities, the bare fallow was the key to the rotation. After considering the relative merits of the various modifications of the four-course system, Mr. Jones went on to say that difficult as clay soils were to contend with, the fallows might be thrown in more frequently, and used very advantageously in the growth of mangolds and

swedes for winter consumption, or vetches, rape, or cabbage for summer and autumn food, which would enable them to form a medium for the production of meat, through the feeding of which the straw would be again returned to the land in an enriched state, and the necessity for heavy outlay in artificial manures obviated. If, however, they could get rid of the bare fallow, with the year's loss of rent and charges, and heavy working expenses, they must take care to remember the principles on which its action had proved of so much value, and introduce them in any other rotation that might be adopted to its exclusion. Thus, by wide sowing of green crops, considerable cultivation could be effected as well as during the growth of roots. Good horse and hand hoeing, frequently carried out, would also make up in some degree for its loss. It was not easy to lay down on this, of all other classes of land, a fixed rotation as the best to pursue. On such land the success of operations of preparation depended, more than on any other soils, on the weather, and despatch might often make the difference of a crop. His argument was intended to encourage the growth of roots, and by shortening very long rotations, and introducing other green crops, enable the land to carry more stock. Such a course as the following would fulfil these conditions, and would be a step in the direction we must ultimately arrive at when our appliances were more generally perfect:

HALF.
Mangolds and turnips.
Oats and wheat.
Beans.
Wheat.
Seeds.
Wheat.

HALF.
Fallow, vetches, rape, and other green crops.
Wheat.
Barley.
Seeds.
Seeds.
Wheat.

They here got a proportion of green crops and cereals (including beans) of five to seven, and although the larger portion of them would be summer feed, there was a certain provision from the root crops and clover hay to carry the same quantity of stock in the winter as in the summer. Among the soils comprised in the second division of his subject would be found our most fertile arable land, the capabilities of which were, as a rule, sufficiently great to grow more than an alternate green and straw crop, or two corn crops in four years, as adopted in the four-course system. An extension to the five-course would offer several points worthy of consideration. A longer interval would take place between the repetition of red clover, which, although thriving on such soils, was apt to fail if too frequently grown, except on the very richest land. The acquisition of a good root of red clover ensured a succeeding heavy crop of wheat. An extra corn crop might be taken without overtaking the natural powers of the soil by a rotation running thus: Roots, wheat, barley, clover, wheat. The root crop should consist of a portion of mangolds and the rest swedes. The mangolds might be followed by autumn wheat, the remainder of the root ground being sown in the spring, and a portion with Talavera, which would be well adapted to such a soil. Barley would next be most suitably grown, and laid down with seeds, which the following year would form a good preparation for wheat, the last crop of the rotation. The continuation of the clover root a second year, and turning this into a six-course rotation, was a system often adopted, and had the advantage of being the means of increasing the stock-keeping powers of such land. This, however, was done at the expense of the extra grain crop that the land could well bear, and did not materially add to the winter stock of food. At times like the present, or should the land show signs of want of rest, it might be readily substituted without altering the rotation. He thought they would all agree that on the stronger loams they ought to endeavour, if possible, to precede barley with wheat; in doing which, and adhering to the four-course system strictly, they were compelled to carry out the rotation as follows: turnips, wheat, barley, clover. They lost the benefit of the clover preparation for wheat by following this arrangement, and got two green and two white crops together. He saw no particular advantage to be derived from following clover with roots, as (alike though there was no reason why mangolds or swedes should not thrive well if taken at this period) the clovers could not be used much later in the season than if they had been succeeded with autumn wheat, as it would be necessary to plough them early in order to decay the turf, so

so to provide a good seed-bed for the turnips in time for sowing in the spring. If this order was observed (with high farming), he saw no objection to a portion of the ley ground being occupied with early winter oats, followed by a green crop, after being harvested, the consumption of which would permit the subsequent sowing of wheat, and keep the course intact. With regard to the light soils, they were by nature more unfitted for the growth of crops from the absence of those ingredients of which the structure of plants was partially formed. The prosperous cultivation of this land was more dependent upon the production of beef and mutton than was that of any other description; and if they had found it incumbent upon them to keep this object in view to meet the demands of an increasing population in farming stronger soils, they would find it was absolutely requisite on the lighter ones. This class of land possessed the advantage of having soil the mechanical texture of which admitted of easy cultivation, which, by its porosity, was always dry and workable, and which, together with its warmth of temperature, admitted of the rapid growth of plants and their early maturity. Its drawbacks were its sterility, its tendency to grow weeds quickly, and its capacity for disposing of manure, which, when not received by the growing plant, was soon dissipated in the subsoil. What, then, were the essentials necessary to develop its natural advantages and combat its defects; and how far did the four-course rotation of cropping accomplish them? By providing an alternate green crop, fed on, with a white one, any considerable diminution in the condition of the land was prevented, although the two off-going crops of grain would not be fully returned by the consumption of the straw and green crops. One of the most complete courses of cropping which had come under his (Mr. Jones's) personal observation was pursued on a farm of a variable but moderately light nature in part, in Hampshire, and consisted of the following modification of the four-course system: wheat, followed by trifolium incarnatum, sown in the autumn on one-fourth of the

stubbles, vetches sown about the same time on another fourth, and the other half left for mangolds, early swedes, or early roots. The trifolium was followed in June by swedes on the portions first cleared, and by common turnips, rape, or transplanted cabbages on the later removed portions. The whole of the fallow crops were succeeded by barley, one-half of which was seeded by red clover; the other part being laid down with a mixture of white Dutch and trefoil, with a small proportion of rye grass. The results were very satisfactory, the crops all being exceedingly heavy. It was difficult to determine by an array of figures how far one method of cultivation exceeded another in cost. Perhaps it would be equally unsatisfactory; for he must confess he agreed to some extent with the late Sir Robert Peel, that "nothing is more fallacious than figures." The value of the return of produce must be the standard by which the merits of any system must be measured; and, provided the cost of raising a crop did not equal its value, it mattered not adding to the expenses of cultivation to effect this purpose. He looked forward in good hopes and with faith to the more regular employment of steam power as one of the great means for improving the general cultivation of the country, both from the greater despatch as well as from the superiority of culture that would be attained by its application. His conviction was that the basis of good farming in the ordinary run of arable land must be to alternate, as far as it was practicable, restorative green crops with cereals (which exhaust more particularly the nitrogenous substances of the soil), which was the principle of the four-course system; but he thought the time had come when the strict adherence to a hard and fast rule should be forgotten as a thing of the past, and it was in many an instance a cause of loss to the occupier, without being a gain to the owner, and consequently it was an act of folly under these circumstances to pursue it.

After a brief discussion a vote of thanks was given to Mr. Jones for his paper.

THE FORMULA—FORAGE, CATTLE, CEREALS.

[TRANSLATED FROM THE JOURNAL D'AGRICULTURE PRATIQUE.]

It may be said that the doctrine of chemical manures, as presented by M. Georges Ville, involves two perfectly distinct operations: first, a work of destruction seeking to show the present insufficiency of farming by farm dung; and secondly, a work of instruction, which consists of raising upon the ruins of the ancient system of husbandry, the new one of chemical manures. "This is," they say, in speaking of the doctrine propounded, "the agricultural system that ought to prevail; for according to M. Ville, it is necessary to aid intensive culture by a permanent importation of manure to regulate the share performed by cattle in the advantages procured by it, and to do away with the necessity of producing dung at whatever price; in other words, according to the formula, pastures, cattle, cereals, the doctrine of chemical manures is opposed to the new formula—the employment of manures, cereals, cattle. On this principle the cattle is no longer the starting point for agriculture; it is its apex. If it yields a profit they develop it; if it involves a loss they reduce it, and even suppress it to the extent that they have, in an extreme case, only the teams and a few animals to consume the products of a sale, more or less, impossible.

Evidently M. Georges Ville is no longer so peremptory as in the first period of his enlightenment; but it is enough that in his first attempts he had opened up high questions of rural economy without having previously reflected upon the bearing of his formulas; that for a very long time, if not for ever, his opponents will make no account of his recent concessions. Is he, on the other hand, sincerely converted? That is, at least, doubtful. A chemist above all things, the Professor of the Museum has studied rural economy only when it was too late, after having extolled a system, after being placed in that state of mind in which, in spite of themselves, men possessed of a predominant, imperious, and absolute idea, regard as secondary and inopportune all that opposes their principle con-

ception. When, therefore, M. Ville says forages, cattle, and dung, even, in a good sense, we are on our guard and deem it a purely oratorical artifice, an insinuation, a means of engaging the attention, in order to lead it back presently to a ground on which chemical manure will shine alone with the greatest brilliancy.

To the extreme M. Ville has neglected nothing in order to disparage agriculture with dung, that is, by pasturage and cattle. As a chemist, he has demonstrated that dung is a compound mass, of which four-fifths of its weight are inert matter. An improvised economist, an accountable inspector of figures, a reader of agricultural works, led by temperament and occupation to mount the pedestal of reformers, disdaining, as such, half measures and middle situations, he has striven to demonstrate that dung is dearer than is generally supposed, and even so dear that the farmer marches to his ruin by engaging to the utmost in the production of cattle.

This part of the work of M. Ville is what I call his work of demolition, and it is what I propose to take part by part. It is perhaps known that I look upon the promoter of the doctrine of chemical manures as a man who has originated a grand and useful agricultural agitation. In presence of this service rendered, and knowing besides how much a cause gains by being presented without passion or party feeling, I shall endeavour not to forget that, at this moment, I am addressing at once very devoted partisans and as determined opponents of the doctrine of M. Ville, and that, consequently, I must not reckon on the favourable attention of either except on the essential condition of not stumbling for a single instant before the impartial truth.

I insist upon this fundamental point, that it is going too far to advise placing a head of cattle or its equivalent upon every hectare (or 2 a. 1 r. 35 p.) of cultivated land. But on the other hand, one excess does not authorise another, and at

the same time we may charge the ardent Professor of the Museum with acting against that advice, to the extent of recommending the cultivation of cereals as a means of arriving at the production of forage crops. There is in this an eccentricity which, in spite of all the concessions of the last hour, places its author in a very false position. It is true that this manner of astonishing the mind is often employed in our days. We ought even to admit that it sometimes succeeds. At the end of the account reflecting men, if they have allowed themselves to be surprised, finish by coming back to reality. The charm is dispelled, and they repeat with the ancient masters: pastures, cattle, and cereals.

Undoubtedly, farming by forage crops and dung has not always yielded profits; and it was not without very well grounded motives that, in order to demonstrate its limited power, M. Ville has cited the example of many celebrated undertakings, especially those of Roville, Grignon, Bechellbronn, &c. Roville was worked with a *capital insufficient* for extensive culture, and produced only average returns. Grignon had a large capital, but the want of information prevented him from employing remunerating cattle, and his demonstration of the gross profits arising from large capitals were not so conclusive as we might wish. Bechellbronn was an experimental, rather than a productive, farm. Like Roville, the capital was below the requirements of an agriculture of great returns.

An important fact overrules all the citations of this kind that can be urged against forage agriculture; that, generally, in the first half of this century we launched into *alternate culture with stabulation*, the prototype of the period, without fulfilling the principal conditions which might have secured its success. The more we operate upon poor land the more we are convinced that it is necessary to improve them very quickly by a distribution of crops with a preponderance of roots and large crops of mowing grasses. Thus have been accumulated enormous capitals on lands, which too often have been resold or farmed out without any regard to the improvements of which they have been the subject. A fatal fall, if it was one; for, without going back to the true cause, Science is condemned for it: and this is how, in the countries where it occurs, agricultural progress proceeds so slowly. It ought to be known that there are forages and forages; and that if roots and pastures of large returns are one of the essential supports of a rich intensive cultivation, there are situations where it is better to have recourse to the bare fallow and pasturage—at least upon a part of the land not provided with sufficient dung for a *maximum* crop. M. Ville, to my knowledge, has never taken into consideration the utility, more or less provisional, of pastures and fallows. Habituated to high aims, he loves and extols only intensive culture. He is in this sense, but with some reservations, a man of the future more than of the present.

One of our professors of rural economy, the more remarkable for his aptitude for embracing agricultural questions in their largest generality, Rayer, had characterised the several periods of the fertility of the soil by the crops that ought to predominate in each of the periods. At the bottom of this productive scale he placed the foresting period, thus designated because that then the lands can be only estimated by the growth of the timber. Then came the pasturage period, in which the lands, possessing a degree of herbiferous aptitude, lend themselves to the adoption of a pastoral or mixed pastoral cultivation. The third period was termed the forage period, and corresponded with that state of fertility of the soil, in which the cultivator, in order to produce grain profitably, ought to appropriate a large part to roots and hay. The cereal period came at that moment in which, without danger of exhausting the soil, the production of grain may have the ascendancy over the production of forage. The commercial period marked a fresh progress: it represented fertile lands in which the crops for exportation, or commercial crops may, occupy large extents of land. Lastly, the gardening period, or the kitchen gardening crowned the edifice; we are then at the summum of fertility, before a numerous population who contend for the soil in order to subdivide it and cover it with crops by hand labour.

It is not necessary to adhere too closely to the letter of this ingenious classification of Rayer, for it is certain that the succession of the systems of cultivation is not always and everywhere in this methodical order. There is, for instance, poor land which under the influence of a rapid increase of openings are brought almost suddenly under very extensive culture; and,

reciprocally, there are rich lands which from want of capital, hands, local commerce, &c., remain under pastoral culture when even the nature of the soil itself is suited to arable culture. Still, it is that in taking a general view of the land intended for the plough, pasturage, fallows, and forage crops are the first resources of a commencing agriculture which seeks the improvement of the soil. Such is the predominant law; the cereals come afterwards.

Is there in this a fact to be regretted; one of those facts that authorise us to regard cattle as a necessary evil?

According to M. Ville we should be tempted to believe so; but to look at things less systematically, and knowing that the public consumption requires at once bread and meat, and other animal food, we are compelled to acknowledge the wise arrangement of a system of cultivation which in the distribution of crops devotes it conjointly to forage crops, cattle, and cereals. It is thus that agricultural production, in organising itself for consumption, secures reproduction of crops by the manure; and thus it is that agriculture works at once for the present and the future.

And at what moment have they chosen to organise a crusade against cattle, regarded as a manure machine?

It comes at the very time at which the consumption of animal food is increasing to a very large extent; when the country places themselves, now provided with roads, demand every day more butcher-meat, more butter, more cheese, more milk for their own wants.

Agriculture feels this fortunate transformation in the habits of the public consumers. It formerly practised the triennial course in the north, and the biennial in the south, and thus exhausted the soil by the too-exclusive culture of cereals. It now supports itself on forage crops, and it is clearly seen that it harvests by that system alone more grain than formerly. Whatever M. Ville may have said in the *Official Journal of the Empire*, our agriculture is not the most backward in the world, and everything leads us to believe that it will increase its productive power in proportion with the increase of the demand for animal food. This species of demand has raised the prosperity of English agriculture, by leading to the production of *bread through meat*. The same causes will produce the same effects in France, and if, until now, our rural economy has not felt itself benefited by the increased consumption of butcher-meat in the cities, it has the greater cause to congratulate itself for the tendency of the rural population to consume better food. Comfort in the village, as I have often said, is the great maxim of our future husbandry; it does not exclude, but rather the contrary, that of the cities. I say simply that in a country essentially composed of rural populations, everything of a nature to increase the general well-being of the villages will, by the same rule, also stimulate, more than all other encouragements, the progress of agriculture. And I add, that unfortunately we have lost much time in what relates to this species of improvements.

Must we still further insist on the merits of forage crops in the work of the fertilization of the soil? Is it necessary to speak of their aptitude to draw largely from the atmosphere, to eradicate weeds, to facilitate the cleansing of dirty lands, of the assistance they afford in the feeding of cattle in all seasons? Must we repeat that the variety of crops is one of the means of better arranging agricultural labour, of guarding against commercial and atmospheric vicissitudes, and of better employment of the income? Is it necessary to enumerate the advantages of this admirable law of alternate husbandry—that natural law which advises us not always to impose the same crop on the same land, but to change the plants according to a certain order? Must I show the myriads of insects, the vegetable diseases, which become the scourges of a too-exclusive cultivation, of crops too often repeated?

No! it is not without study or without numerous motives that European agriculture has been brought to seek its fulcrum in the production of forage crops and cattle. By this fulcrum it has obtained abundance, variety, and security of its crops. By it, its expenses have been reduced—it has given satisfaction to the varied interests of consumption; and in short, has systematised the labours of the rural populations whom the exclusive culture of corn crops condemned frequently to idleness and small wages. These are titles that range themselves under the protection of the best principles of political economy, because the prosperity of agriculture and of the public are thereby made to depend on each other.

M. Ville has done well to make concessions in certain points, but there is in his formula chemical manures, cereals, cattle—a manifest contradiction. In it the professor of rural economy places the plough before the oxen. I shall not occupy myself for one moment with his formula of manures. I maintain only that there is a want of clearness in his instructions when, after having written on the frontispiece of his edifice, “chemical manures, cereals, cattle,” he declares that the cultivator according to his requirements will go by the side of cattle or cereals. Evidently, if chemical manure is applied to the production of cattle first, the former formula is set aside. Why then have proposed it? Why, taking the reverse of the agricultural doctrines hitherto respected, has he sought to make a breach in agriculture at the base of forage, cattle, and manure? Should this, by chance, have been a sensational formula, which, having affirmed, he quits, after it has produced its effect, to fall back upon concessions of detail?

The doctrine of chemical manures, as it appears to me, does not imply an obligatory reform of the systems of agriculture. It had comprised the knowledge limited to the use of chemical manures adapted to the soil and plants, and which, satisfied with rendering this great service, would leave agriculture free to produce cattle, cereals, or manufacturing plants in the proportion demanded by circumstances. But M. Ville is ambitious to play another part, and believes he can free agriculture from the obligation of cattle; and in this state of mind he has written and rewritten “Chemical Manure, Cereals, and Cattle.”

In an economic point of view, this is the weak side of the doctrine; and certainly there is nothing attached to our efforts

or those of our collaborateurs that could not lead the readers of this Journal to a more hearty appreciation of the utility of chemical manures. At every instant it has repeated that by these manures we can make at will either forage or cereal crops. Therefore, in our opinion, and in regard to the present at least, the agricultural revolution announced by M. Ville has not the capacity he attributes to it. From the large quantities of manure the mineral kingdom can furnish, it by no means follows that cattle are no longer one of the most valuable auxiliaries of production of cereals. Agriculture disposes of more fertilising matters than formerly, which is the result of the alternate culture. As to the system itself, it depends, as always, on circumstances of soil, climate, markets, and population.

I conclude, therefore, with the conviction that the old doctrine of forage husbandry will continue to subsist, in spite of the doctrine of chemical manures as presented to us by the learned Professor of the Museum. The more forage crops we grow, the more corn we shall harvest. In other words, it is not sufficiently proved that, reversing the terms of the proposition, it can be generally economic, even with the help of chemical manures, to prepare for forage crops by extensive cultivation of grain from the beginning of the operation. The agricultural pyramid remains on its ancient basis, with this difference, however—that, in order to reduce the net cost and increase the gross produce of forage crops, contemporary agriculture employs abundantly manures, supplementary with dung. It can thereby make quicker progress, and that is much.

E. LECOUTEUX.

FARM HORSE DUTIES.

The following correspondence has been published:

“Easton, near Grantham, Jan. 27, 1870.

“Sir,—Observing in the newspapers a letter from the Exchequer stating that horses kept solely for the purposes of husbandry should be liable to duty if employed in carting stones for the repairs of parish roads, will you allow me to ask information on the following case, viz., the tenants on the estate under my management are bound by their agreements to furnish a waggon, with a team of horses and a driver, one day in each year for £75 of rent, for any purpose the landlord may think fit, without charging any satisfaction for such team.”

“The occupiers of farms on the property have for many years discharged this obligation by carting coals to the mansion on the estate occupied by the landlord, and I beg respectfully to inquire if I am correct in assuming that the horses so employed are still exempt from duty, on the ground that the service thus given by the tenants is, in fact, an equivalent for rent, and must therefore be held to be a purpose of husbandry?”

“I have the honour to be, sir,

“Your most obedient, humble servant,

“JOHN T. RUTHERFURD.

“The Right Hon. Robert Lowe, M.P.,
“Chancellor of the Exchequer.”

“Inland Revenue, Somerset House, London, W.C.,

“Feb. 3, 1870.

“Sir,—The Chancellor of the Exchequer having forwarded to this department your letter to him of the 27th ultimo, I am desired by the commissioners to acquaint you that they will not insist upon payment of duty for a horse kept solely for agricultural purposes, which may occasionally only be employed in drawing coals, bricks, &c., to its owner's house, or to the house of the farmer's landlord, in conformity with any provision in that behalf contained in the lease under which the farm is held.

“I am, sir, your obedient servant,

“W. M. ROSSSETTI, Assistant Secretary.

“John T. Rutherford, Esq.”

FARM-HORSE LICENCES.—The following explanation has been given: 11, Downing-street, Whitehall, Jan. 29.

SIR,—In your letter to the Chancellor of the Exchequer dated the 27th inst., you inquire whether farmers will be charged licence duty for their farm-horses when used—1. To draw coals, which is done in some instances with the sole object of relieving the labourers in the farmer's employment, or other poor persons from the cost of carriage. 2. To draw material for repairing the parish roads. In reply Mr. Lowe desires me to inform you that in law farmers would be liable to duty for any of these acts, but in practice—1. The Board of Inland Revenue will charge the duty if the horses are “let out for hire” for the purpose of drawing coals; but if the drawing of the coals is only done occasionally and as an act of charity, without any profit, the liability will not be enforced. 2. Farm-horses used for drawing materials for the repair of the parish roads will be charged if (as is mostly the case) the farmer receives any remuneration, whether in money or in abatement of his rates. I am, sir, your obedient servant, C. RIVERS WILSON.
Mr. W. E. Welby, M.P.

THE SUPPLY OF BEEF AND MUTTON.—The *Food Journal*—a new monthly periodical devoted to social and sanitary economy—should take a good place in serial literature. There is plenty of room for the new venture. Adulteration, it would seem, has become the rule rather than the exception; and we heartily welcome the *Food Journal* as a periodical intended to expose the deliberate frauds that are daily being perpetrated on the public. But there is a vast difference between good advice and sensational statements. Throughout the *Journal* there is an evident tone of Gamgeeism that goes a great way to defeat the ends the new monthly has in view. Professor Gamgee we know to be a clever man. But it requires something more than mere cleverness to solve what is doubtless the most important problem of the day—the best method of producing nutritious and cheap food supplies. “The beef and mutton” says Professor Gamgee, “of the Russian steppes, of the South American pampas, of our Cape farms and Australian runs, must repair the injury inflicted on us by thirty years' disease amongst British live stock.” But it is a fact that cannot be denied even by Mr. Gamgee that the beef and mutton of the United Kingdom, from which we have been receiving so much “injury” for

thirty years, is infinitely superior to the beef and mutton of the Russian steppes, the South American pampas, and the Australian runs. There is no blinking this fact. It is about as patent before the foreign animal is shipped as it is when his stringy carcass is seen hanging in a second-rate butcher's stall. Then Mr. Gamgee goes on: "Medical men have, it is true, failed to discern any great connection between human and cattle diseases." But Mr. Gamgee knows

better than all the medical men of the age. He knows "that human beings occasionally suffer from foot and mouth disease." Will he give us the details of one case? The pen and mouth disease—known as *cacoëthes scribendi* and *cacoëthes loquendi*—is unfortunately too common among human beings. Until greater moderation is exercised, until sweeping generalisations are abandoned, the food question, even in the *Food Journal*, will remain where it is.—*The Sportsman*.

FOREIGN AGRICULTURAL GOSSIP.

The lumber trade of Michigan for 1869 reached a total value of about \$4,000,000 dollars. The lumber cut amounted to 2,029,372,255 feet, valued at \$0,293,325 dollars, to which must be added 3,500,000 dollars worth of shingles, lath, and staves. It is estimated that up to the close of 1869 there had been manufactured in Michigan 7,200,000,000 feet of lumber, and that to obtain this quantity 1,920,000 acres of land had been stripped. It is calculated that 4,000,000 acres of land still remain unstripped, which will yield 15,000,000,000 feet of lumber more. The total value of the future products of the State in lumber, shingles, lath, &c., is estimated at 800,000,000 dollars; and it is thought that 15 or 20 years will be required to cut and send to market the trees now standing. In 1869 Chicago received for consumption and shipment 27,000,000 bushels of wheat, 23,000,000 bushels Indian corn, and 12,000,000 bushels of other grain. The quantity of flour manufactured at Chicago during the year was 600,000 barrels. In the course of 1869, 1,872,000 hogs and 400,000 head of cattle were marketed in the same great western centre of American commerce and enterprise. The expenses of the agricultural bureau at Washington are 1,000,000 dollars per annum, and a New York paper thinks it too much. Kentucky is anxious to encourage immigration. The olive has been cultivated in Florida and on the coast-lands of Georgia for nearly half a century. The oil produced from it is represented as fully equal to the best quality of French oil. The report of the American official Commissioner of Agriculture presents among other interesting facts some encouraging statistics as to the Southern States of the Great Republic. Thus the commissioner returns as follows the value of the live stock in the several States named on February 1, 1868, and February 1, 1869:

State.	1868. Dollars.	1869. Dollars.
Virginia	35,148,573	37,705,568
North Carolina	26,032,156	24,434,747
South Carolina ...	10,693,117	15,361,888
Georgia	26,563,875	31,692,001
Florida	4,190,184	5,097,999
Alabama	21,126,833	27,265,962
Mississippi	16,815,802	28,515,453
Louisiana	8,492,468	15,162,289
Texas	33,608,563	52,651,895
Arkansas	15,309,989	20,366,380
Tennessee	38,708,762	53,136,552
Kentucky	40,491,619	49,189,403
Missouri	50,728,285	64,490,717
Total	327,808,626	408,000,854

From these figures it appears that all the Southern States, with the exception of North Carolina and Texas, have very materially increased the quantity of their live stock within a year. A lot of Californian beetroot sugar has been made, and the business is regarded as established, with every prospect of a speedy and large development. On the 10th of December, 1869, the question of satisfactory and successful production was set at rest by the making of 150 lbs. of crystallized sugar from white Silesian beet grown on the borders of the American river, and leaving an unexpectedly small proportion of molasses. The experiment was conducted by Mr. W. Wadsworth, who had studied in European sugar works, and who is well versed in the various processes in vogue in France and Germany. It is expected that a number of

beet-sugar mills will be erected under the present encouraging circumstances, and that in a few years California will be independent of foreign sugar supplies. The per centage of Californian beet will be shortly made known. The receipts of grain at Buffalo in 1869 were 37,407,121 bushels.—A sale of Durhams will take place at the French Imperial establishment at Corbon on Saturday, Feb. 26. The sale will comprise eight bulls of from 12 to 23 months old, and eighteen cows and heifers of all ages.—The Agricultural Society of Cherbourg, on being called upon to pronounce its opinion as to the effects of treaties of commerce and other matters affecting French agriculture, decided by a majority of 53 to 2 to ask for a continuance of the Anglo-French treaty of commerce of Jan. 23, 1860, and of the treaties concluded subsequently on similar bases between France and other nations. The Society unanimously called for a reduction of railway tariffs, and it also called for a diminution in the military contingent which French rural populations have to furnish annually.—The Society of Agriculturists of France is now holding its second annual meeting at Paris under the presidency of M. Drouyn de Lhuys. The president, in opening the proceedings, glanced especially at the agricultural congresses which had marked the course of 1869. M. Drouyn de Lhuys recalled the facts that during 1869 the Society had been invited (through its delegates) by England to Manchester, and by Germany to Treves. He also stated that during the past year the Society had been enabled to inscribe upon its list of members the names of His Majesty King George of Hanover, His Royal Highness the Prince of Wales, His Highness the Khédive and his minister Nubar Pacha, His Highness the reigning Prince of Roumania, and His Excellency General Buenaventura Baez, president of the Dominican Republic.

We learn from Chili that the occupation of parts of the Araucanian territory is about to be undertaken at once. The Chilean Congress has placed an extra item of 250,000 dollars for this purpose on the estimates. It will be remembered that some time since Mr. Josiah Harris was deputed to get samples of the Guanope Island guano, for the purpose of analysis. These samples, thirteen in number, were duly inspected recently in the finance department, in the presence of many influential gentlemen who had been asked to come, and among others her Britannic Majesty's Minister at Lima. On that occasion the samples were divided, Mr. Harris taking one to the Royal Agricultural Society of England, while the other half of each sample was entrusted to Professor Raymondi, an Italian gentleman and an analytical chemist of some repute. The Professor's report has just been published; it will doubtless be read with some interest in Europe and the United States, as it sets forth the quality of the Guanope article, which is the one which will be supplied for some time to come. The Peruvian Government, while thus frankly giving to the world the analysis of Professor Raymondi, appears to maintain a policy of reserve with respect to particulars of guano deposits upon the main land. Of these, nothing definite as to quality or quantity can be ascertained, beyond the vague rumour of there being some valuable deposits in various localities, affording a supply for years to come.—We have encouraging intelligence as to the settlement of the English colony of Frayle Muerto, in South America. The crops last year were very good, and the English settlers, having turned all their labour and attention to agriculture, were likely to realise splendid returns, especially in their wheat crops. A Mr. Melrose has about 800 acres under grain, which he expects will yield him over £4,000 sterling, clear of all expenses. The

other Englishmen are equally sanguine; they number in all about 150, and the total extent of land under tillage exceeds 4,000 acres. The farms lie within a radius of five or six square leagues of the town of Frayle Muerto, the largest proprietor being Mr. Melrose, who bought last year the land on which the town is built and all around, to the extent of 40,000 acres, for £3,600 sterling, while the property is now said to be worth three times that sum. Mr. Melrose sells small farms, unfenced, at 5s. to £1 per acre, equal to £1,600 to £2,500 per square league; and he stipulates that the buyer must fence in his land within twelve months. There are about 150 English and American ploughs worked by the settlers, who use both horses and oxen for ploughing; there are also 80 reaping machines and 10 thrashing machines at work. The ploughs most in favour are those made by Messrs. Ransome and Sims or Messrs. Howard, while the favourite thrashing and reaping machines are those made by Messrs. Clayton and Shuttleworth and Messrs. Ransome and Sims. Mr. Melrose had engaged 300 Basque labourers for harvest work at 3s. 4d. per day besides board. The farmers will sell their grain at the Frayle Muerto station, whence it will be sent by rail to Rosario. If the harvest realizes the favourable anticipations formed respecting it, there will be a great influx of English settlers next year.—At present each steamer from England brings out half-a-dozen, some with capital, some without, but all fine active young fellows.—The corn crop in New England (United States) ripened slowly in many localities last autumn, and the general average for the year is about 18 per cent. less than for 1868. On the margins of streams much damage was done by heavy rains in the early part of October. Severe drought along the Atlantic coast in July and August affected grain injuriously; but the favourable weather of the autumn gave fresh vigour to the growth, although in the valleys of Maryland and New Jersey violent October rains created floods which swept away stacks of corn: still, the loss from this cause was not so great as to exert a marked influence upon the general average. In Virginia and North Carolina

the drought was severe last year, making the corn crop light. The crop of Alabama and Mississippi, although better than that of some of the other Southern States, is not an average one. An increase on the crop of the previous year is reported from Texas, while in Kentucky the corn was damaged to a certain extent by October frosts. In Missouri a good crop was gathered in. In Illinois there was a reduction of 17 per cent., as compared with 1868. In Ohio, Indiana, and Illinois the ripening of the maize was delayed by the wet spring, followed by a cool summer. In Michigan, Wisconsin, Minnesota, and Iowa a reduction in quality as well as quantity per acre is reported.—Messrs. Parks, proprietors of the Glen Flora Stud Farm, near Chicago, Illinois, have gone into the breeding of Shorthorns on a limited scale. Messrs. Parks have purchased five of the best heifers of W. R. Duncan, and they hope in a few years to have as good a Shorthorn herd as any in the United States. Glen Flora would seem to be growing into a large breeding estate. Alderney cattle are being introduced into Virginia, Mr. Arnold Graef, a newly-adopted citizen of the State, having imported a famous Alderney bull (Governor) bred by Messrs. Seiger and Grabner, of Flox Pond Hill Farm, Long Island.—An American paper says: "A barrel of corn is five bushels shelled in most States, but in New Orleans a flour barrel filled with ears is a barrel of corn, and in some parts of the west one hundred ears represent a bushel."—California is legislating to prevent the adulteration of milk.—An Illinois farmer having 1,400 acres of land derives his whole income from pasturing cattle for his neighbours, receiving for the service two dollars per beast per month.—As a specimen of American progress, it is stated that the greatest farmer in Minnesota began life on a capital of ten cents, pre-empting his first tract of land.—In one of the Cincinnati pork-packing houses 760 hogs periah daily. The carcasses are cut-up with the utmost celerity. One portion goes out in hams and another is transformed into sausages—over ten tons per day. All the lard is extracted by steam, and from it a large quantity of oil is obtained.

CALENDAR OF AGRICULTURE.

Sow spring wheat in places where that crop is approved, as in the northern and north-western counties, where it answers a good purpose, on some strong green crop lands, and on the later fallows of autumn. Throughout the month sow oats, and also barley in the latter part, on the best lands that are dry and early. To cover oats on leys, three double times of harrowing may be required: one lengthwise behind the sower; the second straight across the furrows, which completely demolishes the comb or slice of soil, and pulls it into the cavities over the seed; the third time, lengthwise, finishes the process, which must exhibit a level platform of fine alluvium, without a mark or ripple of any kind. The footprints of the horse must be filled up, or the land is not in a sowing condition. Barley is well covered by two double times lengthwise.

Sow beans broadcast on stubble lands, or in narrow drills made by a ribbing plough across the well-harrowed surface of ground, and covered by a double tine along the drilling; or with a machine with long coulters, that make runs in the land to hold the seed, and cover by a harrow-ag. Sow peas thickly, in not less than four bushels on an acre, in order that the plants may cover the surface of the ground by intertwining and locking the tendrils to retain moisture and exclude drought. A thin, straggling crop of legumes is a most pernicious inhabitant of cultivation, in which weeds of all sorts find a vacant room to row, and mature seeds unmolested, as they cannot be taced by hand or hoe.

Sow vetches for green food early in the month, as soil and climate will permit, being the first sowing in most lanes, and the second in the earliest districts. Make another sowing in the last end of the month to procure a recession of herbage for summer use of the most valuable

plant for that purpose. Seed the ground of leys or stubble thickly, with not less than four bushels to an acre, with a portion of oats or barley, of which the stems will correct the extreme juiciness of the succulent vetch. A large attention is due to this plant to maintain the green food of the farm. At least one acre must be allowed for each work horse on the farm; pigs, calves, and milch cows will require some portion.

Sow Incerne on well-prepared grounds, by trenching, deep ploughing, and the manuring of previous crops, in 10 or 12 lbs. to an acre, well harrowed and covered by a heavy rolling. A plot of ground near the homestead will afford a change of green food in several cuttings of a young age of herbage. The use of the plant does not extend into a comparison with clover in mixture, being very harsh and woody in the matured growth.

Sow flax on good lands, after a green crop, well cleaned and manured. The management of the crop is very troublesome, is only adapted for cattle-farming, and ever disappears before improved agriculture.

Sow parsnips and carrots on good lands, and sandy and earthy loams, rich by previous cropping, and without the application of fresh dung plant the crop in rows 18 inches distant on the flat ground. Steep the seeds in lees of urine, and encrust with hot lime. Sow sainfoin, which may be dressed with gypsum. Apply auxiliary and artificial manures, as top-dressings on young wheats and clovers as salt, rape-dust, gypsum, malt-combs, and nitrate of soda, the last at one to two cwt. on an acre, and also pigeous dung, which is probably the most powerful manure that is known.

Sow cabbage seeds on rich plots, for plants to be used in May and June. Finish the dunging of grass lands.

Set traps, and spread mole hills; bush-harrow the surface, in order to tear and scatter any substances gathered into lumps, and roll with a heavy weight, to smooth the surface for the scythe, and gather any stones.

Plant hops on deep dry lands well prepared by previous cultivation; place the hills six feet distant each way, which best admits the scarifier; put four sets in each pit, one in each corner; use well-rotted dung, and cover lightly with earth, lowering the upper end of the set just in the light of day. The hop being a nettle plant, requires the best qualities of lime, with frequent and ample applications of strong manures in highly concentrated and oleaginous bodies to supply with nutriment the large number of widely-spreading fibrous roots, like to the cabbages, but more widely spreading.

Continue the planting of trees and of young hedges; but cease if dry weather sets in. The cutting of underwoods, and the felling of timber will now be finished.

The earliest water-meadows will now afford a green food, chiefly used for ewes and lambs in grazings by light stock. In cases of extensive floodings, a part of the herbage may be cut, and carried to the homestead, being the finest green food of the year, which to procure the rivers of any country may be pumped into reservoirs on the highest grounds, and thence irrigate the lower grounds. An early green food admits not any value being fixed to its use.

Set traps for vermin, and spread mole hills in all necessary places.

Remove all turnips from the fields; better done in last month. Begin to cross-plough the stubble lands for the early-root crops, as potatoes and mangold wurzel; also the clay lands for bare fallows, when the season of time permits. An early stirring of ground is very beneficial.

In wet weather that prevents sowing thrash and deliver grains, which will be mostly ended in this month, except a portion left for summer straws. Carry the dung from the cattle yards to the heaps in the fields, and strew the yard with straws, cut short, to be made into manure during summer by the constant use of green food, when the quality of the article will equal the winter-made dung, and the quantity will be very considerable. Carry brush-wood and timber, with draining materials, where wanted.

In most districts this month will be the busiest with the ewes dropping lambs. Feed largely with juicy, succulent food—as beet, cabbages, and turnips, and provide the necessary shelter, which in many cases is as beneficial as the food itself. Remove the ewes and lambs to the pasture fields, regularly, as the young progeny get strong.

The fattening of hogs for bacon will be finished this month, which ends the season of curing meat—the young pigs will go into summer stores, and become the earliest for next winter's fattening. The last sales of stall-fed cattle will empty the stalls for the season, and all animals not ripened must become the earliest bees of the grass field, if not pushed forward feeding from this month.

Set poultry on eggs for hatching, and exchange eggs with any neighbour, the breeds being near akin. Feed amply with boiled roots mixed with meals and light grains, with clear running water. Provide a warm, clean accommodation for the young broods, with a separate apartment for each kind of animal. It is both pleasant and profitable to see a numerous and healthy stock of poultry on any farm.

CALENDAR OF GARDENING.

This month is the time of business, and every favourable moment must be used, because the varied character of the weather is not only likely to perplex, but it frequently happens that drought sets in for the spring about the third week, and then it will be too late to hope for the success of many of the lighter seeds. Begin, therefore, early to dig plots for the reception of the main crops, on lands manured in autumn, or from bearing previous crops in the first part of the month. Sow peas in the early varieties that have been mentioned, and the taller kinds of the same catalogue after the middle of the month to the end. During the same time sow beans, the broad and the early long pod, in rows, a foot to two feet apart; carrots in rows, one foot apart, on sandy loams, rich from former treatment, without any fresh manure, which encourages the growth of fibres, stems, and leaves, more than roots. Sow beet and parsnips on stronger grounds, in rows, a foot apart, over trenches of fresh dung half-rotted at a depth in the ground.

Plant cabbages, Brussels sprouts, brocoli, cauliflowers, and kales, all on the best grounds that are deep and rich; cauliflowers should go into the richest lands, much of the manure lying in the bottoms of the trenches under the roots. Guano water is an excellent liquid application to the young plants. The dwarf and Walcheren varieties of the last plant—dwarf green curled and cottager's kale. Cabbages: the Early York and Enfield market. Brocoli: the early white and Walcheren. Brussels sprouts: Tall best to be imported, unless local selections can be depended upon; the Roseberry dwarf variety with larger sprouts. Carrots: the French Horn, and James' scarlet for shallow soils. These names are the most modern designations.

Transplant and sow for summer hearting cabbage; sow a little Dutch red cabbage seed, and green curled savoy for Michaelmas.

Sow the best French lettuce seeds, the Paris white cos; also round spinach, and repeat these sowings every three weeks; in the meanwhile the winter prickly spinach will continue to yield freely for some months, if the weather prove showery.

Sow onions on good encouragement with strong manures, as the contents of privies mixed with fine earth. The true white Spanish variety for large bulbs, the Strasbourg, or brown globe, for the common kitchen use. The sowings should be early on rich deep lands. Sow London leaks to be transplanted.

Sow on light rich lands Wood's early radishes, of which a good crop demands an early sowing on lands that are rich and light, with moisture and warmth sufficient to push the plants rapidly forwards. For these reasons, a frame and glass may be advantageously used; the expense is small and the trouble very slight, to procure an early vegetable of the most favoured relish. Sow a sprinkling of Dutch or early store turnips, a little celery for succession, small salading, nasturtiums for pickle, parsley, basil and pot herbs—namely, fennel, dill, borage, burnet sorrel, all at different times during the month.

Plant mint, thyme, sage, marjoram, lavender, rosemary, and rue in rows of borders, or in separate beds or grounds.

Plant potatoes in rows, a foot apart, the cut tubers placed on the breast of the trench, over a spit of rather dry well rotted dung, the sets being six inches apart and covered by the earth of the next digging. The earl

ash-leaved kidney is yet the foremost variety; and the second early, as the champion and the prolific that ripen in August, should be ready, avoiding manure and choosing or preparing peaty or sandy ground if possible.

Peas and potatoes are the chief vegetables of the garden in general estimation. At least two sowings of peas must be done during the month in the early climates, about the 10th and 25th in the Early and Second Early varieties; in medium climates, the first sowing may be early in the month, and in the second, in the end of it; or, one large sowing in the middle of the month in later localities, deferring the second sowing into next month; which in every case requires lands moderately rich by previous dressings and without any fresh dung, which promotes the growth of leaves and stems rather than of fruit. Potatoes require the same condition of ground and may be richer, as the plant is stronger than a legume; but still without fresh dung. A very careful attention must provide for the early and abundant produce of these two vegetables in the early planting on the proper grounds to ensure success, or without them the garden loses its name, and the kitchen its reputation.

FRUIT DEPARTMENT.

If any trees or shrubs be planted, be sure to finish the work by the middle of the month—puddle in the roots, and cover with abundance of mulch; for if drought set in, the trees will be fatally checked.

Begin to graft apples and pears; cherries and plums do better by budding in summer.

Lightly fork the soil between the rows of currant-bushes, gooseberries, and raspberries; then cover the ground with earthy compost manure. The covering of the intervals between the rows of any vegetable growth with any substance whatever, increases the quantity of produce; a treading of the ground by the foot answers the same purpose, and is very beneficial to early crops of peas on light lands in dry seasons. This application is very cheap, and easily done.

Dig shallow the ground around rhubarb plants, and cover with moist manure of good quality, and thickly placed, as the plant is very strong and succulent, and requires a powerful support.

Plant strawberry sets in rows two feet apart, on beds, and the plants six inches asunder. Single rows in borders should be a foot away from the edging, and as far from any vegetable or shrub. The plants may be permitted to thicken by off-sets in any amount, but not to fill the ground with runners, unless with the object to obtain a new supply. Strawberries require good lands, highly fertilized, or in a wholly fresh condition. The best sorts are the Keen for an early and large crop, the Old Pine for flavour, the British Queen for size and middle bearing, and Knight's Elton for a late, rather tart, but more beautiful fruit.

FLOWER GARDEN.

Sow hardy annuals after the middle of the month, as the pink, larkspur, and mignonette; the half-hardy are raised in frames. Herbaceous plants may be set or divided, or placed in new situations.

Prune roses to well-placed low beds; mulch round the roots with compost, and fork it in. The moss, maiden's blush, and many old varieties can be made standards, with good figure on their own foundation.

Cut box, plant edgings, turn gravel or put down fresh, sweep lawns, roll walk, remove all litter, and keep every place in neat order.

Never discontinue to convey to the dug pit that is bricked or cemented all litter and vegetable refuse, also straws and animal droppings, and frequently baled over with much liquid matter and soap suds from the house. A rich moist manure is thus provided for the strongest crops; for the lighter purposes the dry compost heap is formed with earths and mild limes, and similar substances, for flower beds and the pots of seeds.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR JANUARY.

Although the wheat trade has been very inanimate during the past month, owing to the continuance of heavy imports, the downward movement in prices has not been considerable. Towards the close of the month the condition of the samples sent forwards to market showed a great falling-off, being generally damp; while a decline took place in the value of such produce, which, however, was more apparent than real, as the quality of the wheat was greatly depreciated. All fine samples have commanded full prices; and, being scarce, have sold somewhat freely. Stocks in warehouse have been on the increase; but it may be observed that really good wheat is still scarce, as a large proportion of the recent arrivals have consisted of American and Russian descriptions, the receipts from New York having been particularly heavy. On the other hand, the shipments from the Baltic and from Denmark have been comparatively small, the harvests having proved partial failures in those quarters. We give below a statement of our imports since September 1st, which will show their extent as compared with the previous year:

IMPORTS OF GRAIN, &c., INTO THE UNITED KINGDOM.

For the week ending January 22:

	1869-70.		1868-69.	
	Cwt.	Cwt.	Cwt.	Cwt.
Wheat ...	1,338,774	2,034	636,829	—
Barley ...	270,229	11	283,982	1,095
Oats ...	357,441	240	133,510	717
Peas ...	54,383	213	26,157	225
Beans ...	57,583	—	72,884	48
Ind. Corn	409,072	—	267,986	—
Flour ...	237,434	807	98,561	306

Since September 1:
1869-70.

1868-69.

	Cwt.	Cwt.	Cwt.	Cwt.
Wheat ...	20,788,446	110,230	11,838,123	132,538
Barley ...	3,354,853	6,170	4,468,377	55,312
Oats ...	5,074,129	24,884	2,916,594	38,483
Peas ...	681,557	6,583	673,194	5,395
Beans ...	861,278	943	1,323,997	2,594
Ind. Corn	9,076,076	5,656	5,878,270	178
Flour ...	3,061,154	7,844	1,586,321	17,634

While therefore it was calculated that an import of eight millions of quarters spread over the year would have been sufficient to meet the requirements of consumption, our receipts have been at the rate of fourteen millions of quarters annually. Hence the rapid fall which has taken place in prices during the past six months.

There appears to be no immediate prospect of returning animation in the wheat trade. With large stocks on hand and a further considerable supply afloat there is reason to apprehend great caution on the part of millers in operating. Stocks on the Continent are heavy, while the accumulation on the canals and at the lake ports in the United States is very large. So far, too, the winter has been a mild one, and the navigation appears not to have been completely suspended at any of the more important ports of shipment. Exports have therefore been kept up until a late period, and there is now a probable total of 1,500,000 quarters of wheat afloat for the United Kingdom. In the face of these heavy supplies, therefore, it is hopeless to look for any improvement in the quotations.

The young wheats have made considerable progress. The plants are well above ground, and are looking healthy and

strong. A continuance of frost is desirable, however, in order to check too forward growth.

Spring corn generally has ruled dull. Oats were much depressed at the opening of the month, but a firmer tone has prevailed towards the close. Maize has continued in request, and has maintained full currencies. Beans and peas have given way 3s. to 4s. per quarter, and at the reduction it has been difficult to effect sales.

The Metropolitan markets have been liberally supplied with potatoes, which have been forced to market through the fear of their not being in a proper condition for keeping. The trade has consequently ruled very dull, and prices have been unusually depressed. English Regents are not quoted above 85s. to 100s. per ton.

The hop trade has been particularly inactive. Home growths of choice quality have become scarce, and have commanded extreme prices. American descriptions have met with some inquiry; but foreign hops generally have been neglected, until within the last week, when there appeared more disposition to purchase.

The transactions in wool were above the average at the opening of the month, owing to the cheerful feeling which existed in the yarn trade. Now, however, that the supply of cotton promises to be more abundant, and the demand for woollen goods less extensive, there is less activity in the demand for the raw material. Prices, however, have ruled firm, and rather higher on the average. It is now proposed to hold five series of Colonial wool sales in London in the year, instead of four as formerly.

REVIEW OF THE CATTLE TRADE DURING THE MONTH OF JANUARY.

The year has opened very satisfactorily so far as the Cattle Trade is concerned. The beasts now coming to hand are generally in excellent condition, being weighty and full of meat. The Norfolk season has commenced very well, and there is reason to believe that we shall receive a large supply of beasts from that quarter for some time to come. The past year has proved a favourable one to graziers, as they were enabled to keep their stock out for a much later period than usual, owing to the abundance of feed in the pastures. In this way much expense was avoided, on account of their being able to dispense with artificial food to a very considerable extent, and the large supply of meat that has been raised has been produced at a minimum of cost. Prices have, therefore, tended downwards; but it must be observed that there is no disposition on the part of graziers to force sales, as the herds are still below the normal point as regards numbers, owing to the great depletion which was rendered necessary at the close of 1868 by the long continued drought. Those sanguine persons who hope, therefore, for any further considerable decline, will probably be disappointed.

Among the foreign animals recently exhibited at the Metropolitan cattle market have been some remarkably good French and Spanish beasts. The former are daily gaining favour with London butchers, who state that they "cut up" well; but they will not bear comparison with prime English beasts. Nevertheless, regarded from a monetary point of view, they are likely to continue to be well received, owing to their useful character.

We continue to hear reports from various quarters as to the foot and mouth disease, which does not yet appear to have been stamped out. It is satisfactory to find, however, that a very great diminution has taken place in the number of animals affected.

An early consignment of South American cattle may be looked for, as a line of steamship has been completed to open up the trades between London and Monte Video. It is not probable, however, even should the experiment succeed, that the beasts will arrive in sufficient numbers to influence the market here.

The arrivals of sheep have been on a fair average scale, and the quality and condition of the animals have been good. Prices, however, have continued to rule high, though with a tendency towards a lower range. Best Down sheep have sold at 5s. 6d. to 5s. 8d. on the average; but as much as 5s. 10d. has been realised.

Calves and pigs have not come to hand very freely, nor has the trade shown any great activity. Nevertheless the quotations have been without material variation for pork and veal.

There is a large stock of feeding stuff now in the country. Roots generally are plentiful, and are obtainable at comparatively low prices; while there is an abundance of hay and clover on offer for the time of year. Meadow hay is quoted at 75s. to 84s., red clover at 90s. to 130s. per load. Cakes have ruled dull, and prices generally show a reduction of 5s. to 10s. per ton.

The total supplies of stock exhibited in the Metropolitan Market have been as follows:

	Head.
Beasts	19,251
Sheep	91,760
Calves	1,127
Pigs	965
Total	113,103

COMPARISON OF SUPPLIES.

	Beasts.	Sheep.	Calves.	Pigs.
Jan. 1869	19,280	94,850	654	1,201
1868	17,620	86,220	520	1,610
1867	18,150	82,400	766	1,508
1866	24,621	89,390	1,764	2,225
1865	20,669	73,714	1,095	2,370
1864	19,442	80,230	1,019	2,567
1863	20,455	83,422	1,637	2,456
1862	20,680	82,160	853	2,850
1861	17,618	75,240	677	2,000
1860	20,500	92,425	1,067	2,045
1859	19,805	90,620	921	2,400
1858	20,312	80,742	1,108	1,759

The total imports of foreign stock into London during the past month have been as under:

	Head.
Beasts	4,133
Sheep	15,033
Calves	1,039
Pigs	1,516
Total	21,727

Imports at corresponding periods:

Total in	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858
"	1869	...	...	...	...	...	...	...	...	...	...	...
"	1868	...	...	...	...	...	...	...	...	...	...	...
"	1867	...	...	...	...	...	...	...	...	...	...	...
"	1866	...	...	...	...	...	...	...	...	...	...	...
"	1865	...	...	...	...	...	...	...	...	...	...	...
"	1864	...	...	...	...	...	...	...	...	...	...	...
"	1863	...	...	...	...	...	...	...	...	...	...	...
"	1862	...	...	...	...	...	...	...	...	...	...	...
"	1861	...	...	...	...	...	...	...	...	...	...	...
"	1860	...	...	...	...	...	...	...	...	...	...	...
"	1859	...	...	...	...	...	...	...	...	...	...	...
"	1858	...	...	...	...	...	...	...	...	...	...	...

From our own grazing districts, as well as from Scotland and Ireland, the arrivals thus compare with the three previous years:

From—	Jan. 1870.	Jan. 1869.	Jan. 1868.	Jan. 1867.
Norfolk, Suffolk, Essex, and Cambridgeshire	6,350	5,184	7,000	6,900
Lincolnshire	1,750	1,850	800	1,500
Other parts of England	2,950	2,140	4,580	5,000
Scotland	1,120	2,376	1,804	1,292
Ireland	1,730	903	700	253

COMPARISON OF PRICES.

	Jan., 1870.	Jan., 1869.
	s. d. s. d.	s. d. s. d.
Beef from	3 4 to 5 6	3 4 to 5 6
Mutton	3 4 to 5 10	3 4 to 5 8
Veal	3 6 to 5 6	4 4 to 5 10
Pork	3 10 to 6 0	3 6 to 5 0
	Jan., 1868.	Jan., 1867.
	s. d. s. d.	s. d. s. d.
Beef from	3 2 to 4 10	4 2 to 5 10
Mutton	3 4 to 5 0	5 0 to 6 6
Veal	4 4 to 5 6	4 4 to 6 0
Pork	3 4 to 4 2	3 8 to 4 8

The dead-meat markets have been moderately supplied with meat. The trade, on the whole, has been quiet, at our quotations: Beef from 3s. to 5s., mutton 3s. 2d. to 5s. 2d., veal 5s. to 5s. 6d., and pork 4s. 2d. to 5s. 8d. per 8lbs., by the carcase,

GENERAL AGRICULTURAL REPORT FOR
FEBRUARY.

We have experienced somewhat severe weather since the opening of the month. Navigation has been much impeded, and this fact, coupled with the bad state of the roads, has prevented the supplies of wheat reaching market, except in limited quantities. The trade, however, has ruled very dull, and at the opening of the month a decided tendency towards lower rates was noticeable. Rather more firmness was apparent on the return of frost towards the middle of the month, and a slight reaction took place in the quotations. Since then, however, a relapse has occurred, and the month closes with an extremely heavy tone, and a general indisposition among millers to operate. Nevertheless, there are some features in the trade which must sooner or later exert a beneficial influence upon prices. Stocks of foreign wheat are on the decrease; and this diminution will make further progress, as our imports in the immediate future are likely to be much less extensive than during the past few months, the quantity of English wheat afloat for the United Kingdom having undergone considerable diminution. We give below the stocks of grain of all kinds in granary in London—so far as can be ascertained—on January 31st, which shows that the withdrawals from warehouse during the first month of the year were something considerable:

STOCK OF GRAIN, &c., IN LONDON.

	Jan. 31, 1870.	Jan. 31, 1869.	Nov. 30, 1869.
Flour ... cwts.	328,000	318,000	180,000
Wheat ... qrs.	482,000	485,954	348,104
Barley	57,000	64,350	52,710
Oats	343,000	397,339	240,990
Rye	330	358	117
Beans	10,000	12,134	9,560
Peas	11,000	7,523	2,844
Maize	47,700	51,148	59,681
Buckwheat	10	—	—
Lentils	5	—	—
Tares	4,800	5,514	3,995
Dari	67	1,000	1,884
Milletseed	448	375	1,508
Linseed	39,000	38,594	24,155
Rapeseed	43,000	38,695	31,091
Cottonsd. (tons) ...	700	400	2,745

Total bulk* 1,018,380 1,120,869 770,639

*Except flour and cottonseed.

Consumption will now have to be met by further withdrawals from the granaries, as the arrivals will probably not be sufficiently heavy to meet current wants. Nevertheless, our imports during the month have been large, and the receipts of foreign produce show a formidable total as compared with last year. Since the 1st of September to the present date, they have been as follows:

	IMPORT.	EXPORT.	IMPORT.	EXPORT.
	1869-70.	1869-70.	1868-69.	1868-69.
Wheat...	22,824,236	126,710	13,637,534	134,490
Barley...	3,853,481	11,510	5,635,728	60,288
Oats...	5,429,862	42,576	3,139,226	51,613
Peas...	722,055	7,119	707,908	5,767
Beans...	952,571	1,167	1,463,420	3,065
1. Corn	10,073,275	7,874	6,348,824	522
Flour...	3,460,009	8,437	1,874,484	19,509

It may be remarked that the stocks of English wheat in the hands of farmers are large for the time of year—a singular circumstance when the undoubted deficiency of our last harvest is taken into consideration; but this is owing to the fact that farmers have held back their wheat as long as possible, and have disposed of their barley and other produce as being the more paying articles. Seeing that the return on last year's crop was under the average, farmers naturally expected prices high in proportion; but in this hope they have been grievously disappointed, owing to the excessive importations. We have little hesitation in saying that the past

season has been a very unfavourable one to English farmers, and we doubt whether speculators in floating produce have covered the severe losses they sustained a month or two back. It is as yet too early to pass any opinion upon the growing wheats. The young plants look strong and healthy, and the frost has had a beneficial effect in checking too rapid vegetation.

Spring corn has ruled dull throughout the month, and prices of all descriptions of feeding stuffs have been on the decline, though rather more firmness prevailed, owing to cold weather.

The potato markets were much glatted at the opening of the month, and prices were very low. Supplies, however, were much curtailed on the setting in of frost, and more activity prevailed, accompanied by a decided rise in values. The quality of the arrivals has not been good, all being more or less frosted.

There has been no feature of importance in the hop market. Choice qualities of English have ruled very scarce, and prices have been supported; but yearlings and foreign sorts have been altogether neglected. The continental and American markets have remained dull and nominally unchanged.

Hay and straw have come to hand pretty freely, and prices, after having suffered a relapse, have closed at about the same point as last month: Prime meadow hay £3 15s. to £4 2s. 6d., inferior £3 to £3 10s., Rowen £3 10s. to £3 5s., prime clover £5 15s. to £6, inferior £5 to £5 10s., prime second cut clover £5 to £5 10s., inferior £4 to £4 10s., straw £1 6s. to £1 10s. per load.

Wool has ruled quiet but firm. Some demand has been experienced for English lustras and demi-lustras, but staplers have refused to make any concession on any quality. The first series of public sales of colonial wool are now going on. The attendance of buyers, both home and foreign, has been good, and prices fully equal to the closing rates of last series have been paid.

REVIEW OF THE CATTLE TRADE DURING THE
MONTH OF FEBRUARY.

There has been an absence of any important feature in the cattle trade during the month. The receipts of stock from our own grazing districts have been about an average, and there has been a decided improvement in the quality of the stock. From abroad, however, owing to the tempestuous weather, the arrivals have been on a less liberal scale. As regards beasts, the condition of the Norfolk arrivals continues to bear out an assertion that the season would be a favourable one, a considerable increase in the weight of meat being noticed. From Scotland, also, the receipts still give satisfaction. In the trade a want of animation has been observable. Even for the choicest stock the demand has been restricted, and the value of the best Scots and crosses has fallen to 5s. 2d.; in fact, this quotation has been quite the extreme, many really good beasts having been disposed of at 5s. per 8 lbs.

With sheep the market has been fairly supplied, and some prime breeds have been forwarded. We regret to notice that, notwithstanding the severity of the weather, some shorn sheep have made their appearance. It is to be hoped that the attention of the proper authorities will be drawn to this matter, and that an effectual stop may be put to the practice of shearing sheep during inclement weather. In reference to the state of the trade, more firmness has been apparent, and the value of the best Down and half-breeds has been steady at 5s. 10d. to 6s. per 8 lbs.

A few lambs have come to hand, and have found buyers at about 7s. 6d. to 8s. per 8 lbs.

The supply of calves has been limited. The trade has been firm, and the quotations have had an upward tendency.

There has been a moderate supply of pigs on offer, for which the demand has been quiet, at about late rates.

The demand for feeding stuffs has improved, the supply of grass being much less extensive. However, there being still a large quantity of hay and roots unconsumed, values have not advanced to any material extent.

The total imports of foreign stock into London during the month have been as under:

	Head.
Beasts	3,349
Sheep	16,097
Calves	878
Pigs	1,060
Total	21,384

Imports at corresponding periods:

Total in 1869	27,988
" 1868	4,877
" 1867	26,206
" 1866	39,241
" 1865	32,904
" 1864	12,228
" 1863	10,500

The annexed figures show the total supplies of stock exhibited at the Metropolitan Market:

	Head.
Beasts	16,322
Sheep	104,185
Calves	868
Pigs	350
Total	121,725

COMPARISON OF SUPPLIES.

	Beasts.	Sheep.	Calves.	Pigs.
Feb. 1869	22,066	111,600	1,331	1,200
1868	16,840	83,480	593	1,670
1867	17,140	79,710	1,081	1,979
1866	21,240	85,070	1,125	1,215
1865	21,158	66,590	1,198	2,714

The arrivals of beasts from our own grazing districts, as well as from Scotland and Ireland, thus compare with the two previous years:

From—	Feb., 1870.	Feb., 1869.	Feb., 1868.
Norfolk, Suffolk, Essex, and Cambridgehire	6,200	5,555	6,700
Other parts of England	2,970	3,160	2,000
Scotland	875	1,848	1,793
Ireland	1,240	851	820

Beasts have sold at from 3s. 2d. to 5s. 4d., sheep 3s. 4d. to 6s., calves 4s. 2d. to 6s. 4d., and pigs 4s. 6d. to 5s. 10d. per 8lbs., to sink the offal.

COMPARISON OF PRICES.

	Feb., 1869.		Feb., 1868.	
	s. d.	s. d.	s. d.	s. d.
Beef from	3 4	to 5 8	3 2	to 4 10
Mutton	3 6	to 6 8	3 4	to 5 0
Veal	4 6	to 6 0	4 4	to 5 6
Pork	3 6	to 5 0	3 4	to 4 2
	Feb., 1867.		Feb., 1866.	
	s. d.	s. d.	s. d.	s. d.
Beef from	3 4	to 5 4	3 8	to 5 2
Mutton	3 6	to 6 2	3 8	to 6 0
Veal	4 8	to 6 4	4 0	to 5 8
Pork	3 0	to 4 2	3 6	to 4 6

The dead-meat markets have fairly supplied with meat. The trade, generally, has been quiet, at our quotations: Beef has sold at from 3s. to 4s. 10d., mutton 3s. 2d. to 5s. 2d., veal 5s. to 5s. 8d., and pork 3s. 8d. to 5s. 8d. per 8lbs., by the carcase.

SOUTH LINCOLNSHIRE.

We have not much of any agricultural value to report. The weather has been unusually changeable and severe. Sunday (the 13th instant) was a day long to be remembered from its boisterous and stormy character and intensity of cold—perhaps the coldest day we have had since Christmas 1860. Sheep, as usual, suffered considerably. Cold, however intense, does not affect our Longwools much unless accompanied with stormy winds and drifting snow. This was the case on Sunday (the 13th instant) and part of the following Monday. The number of storm-struck sheep is considerable; but as the weather "has taken up" we hope they will soon recover. Upon our own farm we have only had to slaughter one. The

others are coming round. The turnips have deteriorated in quality from the biting frost, and were so hard that the sheep could not eat them, and had to be sustained from the mangold graves or other resources, as chaff, pea-haulm, and hay. In other respects the flocks have thus far wintered favourably. Our markets are already supplied with store stock, particularly sheep, which are readily sold at high prices relatively, when taken into account with the low price of corn. The fear of the holders appears to be in the great probability of a reduction of prices, both from the low price of corn, and the abundance of sheep. The high price yet received for mutton will keep up the value of all forward animals, but those in low condition must give way. The number of fatted cattle in this district is limited, and the prices are well sustained. Pork is a little cheaper, but store pigs are still very dear. It is interesting to know the cause of the high price pigs have so long made in the market. The statistical returns give a falling off in the number of pigs last year to near 600,000; but as pigs are almost as prolific as rabbits, the stock will soon be replenished. It is but a short time since they were scarcely worth breeding. Piglings sold readily at 2s. 6d. each. The lambing season is just commencing. The ewe flocks appear to be in a favourable condition. Great caution should be taken that no unusual disturbance takes place amongst them. They cannot be kept too quiet nor have their food too regular. We have not been able to do anything upon our arable lands for some time, but as the ploughing is forward no great anxiety is felt. The seeding of peas will be proceeded with as soon as the land is in a good state to receive them. The wheat-plant has been sadly cut by the late keen winds, but not destroyed. No winter-proud wheats this year. We never saw them "backward," but there is a fair plant throughout. The grass lands don't exhibit a blade of green, and bear ample testimony to the severity of the frost and wind. Our stack-yards look thinly stocked and the thrashings have been very unsatisfactory. A scanty yield, a light weight, and low price; a bad farmers' year. Potatoes have kept pretty well; the yield of good ware is light, and the price not remunerative. The culture of potatoes grows more unpopular daily, and the probability is that we shall plant a much smaller area than heretofore in this district. The expenses are very great, and if we cannot realise from fifteen to twenty pounds per acre, they are unremunerative, and must give way to mangolds and Swedes, to be grown for stock food. True, we consume through our stock large quantities of diseased potatoes, and thus aid the returns of the potato crop, but the weight per acre is so greatly inferior to mangolds and Swedes that we cannot profitably grow them for stock food. Winter grazing, or the fattening of farm stock in the winter, is gradually on the increase, and the culture of mangolds keeps pace with it. This is quite right, and farmers will ere long find it their best practice. The production of meat rather than grain will become more and more their aim, and no doubt will ultimately yield them the best returns.—Feb. 10.

BEDFORDSHIRE.

For the past three months we have had various weather, sometimes frost, at others very mild, but on the whole a dry winter. During the past week, or for the last ten days, the cold has been very severe, with the wind either north or north-east, with occasional flights of snow. The frost we have no doubt will be very beneficial for the land intended for spring cropping; but at the same time it is to be feared it may injure the young and backward wheat crops. The price of this grain at the present date can scarcely pay a farmer for his expenses of tillage, &c., for the crop, especially as the last year's growth was so deficient in yield; we have in several cases known where there has not been more than 2 to 2½ qrs. per acre on good land. There are a few pieces of peas and beans sown, but they will not be much earlier than those that are sown later, on account of the sharp weather. We shall commence on barley as soon as we get a favourable change in the weather; this corn has also deteriorated in value. It is not worth so much by some 6s. or 7s. per quarter as it was some two months back. Farmers, in general, who have thrashed their corn out immediately after harvest have been much more successful for several years past in their price for all kinds of grain. This will be

a bad year for a farmer who is wholly (or nearly so) dependent on his stack-yard, as all kind of grain yields very badly. Beans and peas in very many cases are not worth the expense of thrashing, so the stock are being foddered with them in the straw. Mutton has been making good prices, and sheep appear to thrive better on the roots than in some previous winters, on account of the dry weather. There are a few haggets now being clipped for the butcher, but the weather has been very cold for the poor animals. All kinds of feeding stuff for cattle have been cheap, so we doubt not there will be a great deal of meat in the country.—Feb. 18.

WEST SUSSEX.

Winter seems to be come at last. We had very heavy rains at the beginning of the week, causing heavy floods on the low lands; but the temperature was mild, and many men beginning to think that spring was commencing to exert its kind influence. But on Wednesday afternoon came a frost, "a chilling frost," very suddenly, and since that time we have had nothing but very sharp frost, lots of snow, and a nipping east and north-east wind. What effect these sudden changes may have on vegetation is yet to be seen, but they must be trying. The wheat plant in this district is small and backward. Much wheat was sown rather late, and it came up slowly, and on some of the ley ground appeared to suffer from slug and wireworm. There is no such thing to be seen as a piece of "winter proud" wheat. The young seeds and artificial grasses are generally well set on the ground, and give promise of a good crop. Fat stock has been selling well all the winter, though it appeared to be a little falling off in value, but this weather must check any downward movement. Lean stock has commanded very high rates. All cattle must now have great care and attention, both as regards food and shelter, or they will rapidly lose condition. This late frost may have a bad effect on the turnips and swedes in the ground, and feed will, perhaps, be scarce in the spring. The hay stacks will also soon look smaller, from the constant calls on them; fortunately the last proved a good crop of hay. The farmers of the present day appear to turn their attention a little more to politics, and even the Government begins to talk of the imperfect manner in which the corn returns are made. I thought every man with a head on his shoulders had known this for years, but farmers are not men to make any general movement. At the time I write there is no sign of any abatement in the severity of the weather; every appearance of more snow.—Feb. 18.

CORK COUNTY.

The winter has been, on the whole, exceedingly favourable, rain not having fallen up to this time in excessive quantity; nor yet has there been continuous frosts of any intensity. Twice the thermometer fell to 19 degrees below the freezing point; but in each instance fresh and open weather succeeded immediately. Now, however, the weather seems to have bed come thoroughly broken, and very little work can be attempted on the field. Spring preparatory operations are well forward, in consequence of the open character of the past season; and potato planting, on friable soils and dry situations, has been pretty extensively carried on. There has been little difficulty in bringing stock thus far through the winter, and food is plentiful all over the county. Turnips and hay are, in consequence, very reasonable in price, and have been sold at prices which do little more than cover the cost of production. For the past three months turnips have averaged from 13s. to 16s. a ton delivered. And excellent hay from 48s. to 52s. a ton, the very best rye-grass seldom exceeding 28s. Straw, from the lightness of the crop, is dearer in proportion, being from 40s. to 60s. a ton, according to condition and quality. In every case the buyer has the best of the bargain, the unfortunate producer having no alternative but to accept his offer, being compelled by dire necessity to turn every available article on his farm into cash so as to meet his liabilities. The purely arable farmer (nearly all poor and needy ones are such) feels the present state of affairs very acutely, as his crops were not only extremely light, but the quality was inferior, and the market value as low as it could well be—so low, in fact, as to make the year an indifferent one, even had the crop been good. Wheat and barley were not quite so much affected by the dry

weather, and those who had a fair proportion of each have not suffered so much, barley having carried a very good price in the beginning of the season for malting qualities. Oats, which are the principal dependence of the small farmer, turned out miserably, many fields not returning the seed; and to make up the money required for rent, rates, and other pressing expenses, they are compelled to sacrifice a portion of their fodder, which can be very badly spared, the few turnips grown having also to be turned into cash. Oats, good enough for seed, can scarcely be had in some parts of the country, samples for that purpose begin now to be looked for, and are worth 2s. a cwt. over the shipping rates. We never recollect to have seen distillers purchase such poor qualities of oats as they have done this season, some lots, although dry and well-harvested, being little else than husk. Of course, could they have got better, these would not have been bought; but heavy oats were not to be had. The very low price of corn has been a great inducement to use it extensively in cattle-feeding, as it is decidedly more economical than cake, there being nearly two tons for one in the case of linseed; and rape having been hard to get of good quality, feeders were shy of using it, preferring corn instead. Rapecake of inferior quality is fit for nothing but manure, as cattle will not touch it; and to persist in placing it before them is a mere waste of time and money, as they will pick out every slice of the turnip, and leave the cake after them in the troughs. The markets have up to this time been very well supplied with beef, and prices have, in consequence, remained at a moderate standard; nor is there much appearance of anything like scarcity till at least a very late period of the season. So quiet is the tone of trade in fat cattle; and so easy is it for butchers to supply themselves, that many lots of store stock, laid in three months ago at long prices, would, if sold now, make but little over first cost. Sheep begin to get scarce, and wethers of good quality bring readily from 8d. to 9d. per lb. At this advanced period of the season the offer is worth a good deal, and enables the buyers to give an extra 1½d. per lb. on the dead weight. Holders of sheep stock are unanimous in the expectation of good prices for lamb and mutton during the ensuing season, and to all appearance there is but little likelihood of their hopes being disappointed. At all the public sales competition for breeding sheep has been wonderfully keen, and in every instance where the flock had a name for the purity of blood, from 80s. to 80s. was freely given for ewes in lamb, regardless almost of condition. The low price of corn has given a great impetus to stock breeding, and the general tone of conversation amongst agriculturists at present would lead one to the conclusion that Lord Carlisle's idea of Ireland was on the eve of being verified, and that she was in reality about to become "A land of flocks and herds." Although the foot-and-mouth disease visited this county, it was not of a fatal or even very troublesome type, the animals getting over it in a few days with scarcely any attention, neither their condition or produce being perceptibly affected. Being so much in the open air, as the cattle are so far south as this, seems to impart a hardness of constitution which enables them to resist the attacks of disease, the thick coat of hair which nature provides under these conditions enabling them to pass through the most severe and sudden changes of weather with impunity. The extraordinary excitement which prevailed a couple of months ago on the subject of "Tenant right" and "Fixity of tenure" has in a great measure subsided, the most zealous promoters of these measures seeming to await, with whatever amount of patience they can command, to see what will be the result of their agitation at the coming sitting of Parliament. It would be hard to conceive of a legislative body conferring the rights of property without purchase, and thus preventing capitalists, the very men who are badly wanting (a poor landlord being a continual source of misery), from investing their money in landed property. It is only reasonable to suppose that there are few wealthy men to be found who would be willing to assume, as partner, a man who contributed nothing to the common stock, and yet whom it was impossible to get rid of without purchasing the share or shares to which he was legally entitled, but for which no money was ever paid. Compensation for improvement on a broad and liberal basis, which should undoubtedly have been the law of the land long ago, is now however confidently expected, and if the present governing party intend to preserve the support of the tenant farmers of Ireland, they will take good care that their hopes on this very important point are not disappointed.

THE CORN TRADE.

BIRMINGHAM, 2nd Month, 3rd.—Owing to the very large arrivals of foreign grain, particularly of wheat, the past year has been one of loss and disappointment to the trade. Our prices are doubtless now lower than they would have been if we had had a good crop at home. Foreign shippers appear to think that England can absorb an unlimited quantity of wheat, and to disregard the fact that our total consumption is only about one-half that of France. When it became clear that our harvest was likely to be deficient, so much grain was sent forward that the extra imports into the United Kingdom during the last five months of 1869 have exceeded the proportion of difference between a good and bad crop. As we think that after making the usual deduction for seed the yield of the last season cannot exceed 11,000,000 quarters, the quantity to be supplied by imports is fully as great as it was after the harvest of 1867, when prices were 20s. to 30s. per quarter higher. The excessive supplies are probably attributable to a great production in America and Southern Russia, combined with an absence of demand in the other corn consuming countries. We have received more wheat from the United States and Canada than in any previous year; but the export thence is now temporarily checked, not only by the frost, but also by the heavy losses which have been sustained by consigners. The low price of bread is a great advantage to the working classes, and must, as heretofore, be the forerunner of an improvement in the general trade of the country; as the less people require to spend on food, the more they have left for other purposes. Meat is relatively very dear, and seems likely to continue so, negating the old saying that, "horn follows corn."

The number of wheat-laden vessels on the way to the United Kingdom is stated at 256, but it is reported that many of these have already been directed to continental ports, on account of the reduced prices in England; this reduction amounts to 8s. to 12s. per quarter, and French prices are now rather higher than ours. The crop in that country is officially reported to be 7,000,000 quarters less than the previous one, and increased imports will probably be required. The stocks in our leading ports are more than double what they were at the end of 1868. Those in the American and Black Sea ports are stated to amount to 1,500,000 quarters, against about 1,000,000 quarters a year ago. It is also probable that our farmers hold more wheat than usual after a deficient crop. A large quantity of wheat is on the way from California, but not of such fine quality as heretofore. Unless shippers are checked by our very low rates, there are also likely to be considerable shipments from Chili, if not from Australia. Our imports of wheat and flour in the year 1869 have amounted to 10,216,975 quarters, against 8,628,987 quarters in 1868. So far, Scotland and Ireland have not taken the usual proportion of the arrivals.

Barley has fallen about 10s. per quarter in the twelve months, or nearly as much as wheat. There are far fewer cargoes on passage than at this time last year, and stocks, unlike those of wheat, are moderate; so that with a backward cold spring we look for some improvement in value.

Throughout the year our chief supplies of oats have again been from Ireland. Only a few cargoes have arrived in Gloucester from France and Holland. Prices have, however, been forced down by the very large sale of Swedish and Russian oats from London and the East coast ports.

Beans and peas have only gone down about 5s. per quarter, and in some of the country markets both sell for as much per bushel as wheat.

Maize continues the favourite article for feeding horses, cattle, sheep, and pigs, although it is not now cheaper than grinding barley and the lower descriptions of oats, and is dearer than Dari and millet. The imports of this article into Gloucester have consequently been very large.

JOSEPH AND CHARLES STUBBS.

THE SEED TRADE.

At the opening of the seed season, we beg respectfully to submit the result of our information as to the growth in this country, and also on the continent and in America, of the most generally used descriptions of agricultural seeds,

RED CLOVERSEED.—This season's red cloverseed, it must be borne in mind, is sowed from seed sown in the spring of 1868; and as, owing to the excessive drought of the following summer, a large proportion of this failed, the acreage left was very small, and the plants being unusually poor and thin, the yield of 1869 has consequently been very deficient. This failure in the clovers was the cause of the unprecedented demand for *Trifolium incarnatum*, &c., which prevailed during the autumn of 1868, which was needed to fill up the deficiency of plant. The English growth of red has accordingly been exceedingly short, and the quality for the most part very indifferent. These remarks may also be applied to Germany and the North of France. The quantity of seed imported from the former country during last spring was something extraordinary—the reverse is the case this season—the Germans having actually been competing with us in the French market for their own home consumption. America has shown she has but little old stock on hand, and a very small crop of new, by the large orders which have been transmitted to this country for seed of American growth; such seed to the extent of several thousand bags, although two or three years old, has been recently re-shipped to New York; no other description, except the produce of the States, being admissible without the payment of a heavy import duty. The only parts where any supply of red clover seed may be expected from are Brittany and the South of France; and the English and continental demand has now nearly exhausted the growth of these districts, and occasioned an advance there to prices relatively higher than those ruling here.

ALSKYE AND WHITE CLOVERSEED.—The yield in this country is small, for the reasons given above, but the quality is satisfactory. We are largely dependent upon Germany for our supply of these sorts, but the quantity offering thence is limited. Prices are high, and from the scarcity will, it is thought, go still higher.

TRIFOIL.—This is a very deficient crop, both at home and abroad. Fine new seed is exceedingly scarce, and readily commands high rates. There is, however, a considerable stock of old seed, which can at present be bought on moderate terms.

FRENCH-ITALIAN RYEGRASS.—The growth is moderate, and stocks are light. Its great superiority over English, Scotch, and Irish seed causes its use yearly to increase. Prices are advancing both here and in France.

SCOTCH AND IRISH GRASSES are this year very cheap and plentiful.

During the last two years autumn and early purchases have proved disappointing, and, as a consequence, but few country buyers have as yet gone into stocks. This year, however, taking into consideration the limited stocks on hand, and the certainly deficient growths, we anticipate a speedy enhancement in values.

London, February, 1870.

JOHN SHAW AND SONS.

AGRICULTURAL INTELLIGENCE,
FAIRS, &c.

ASHBORNE FAIR.—There was a very small show of cattle, in consequence of the very bad weather. Good barren beasts realised high prices; inferior stock moving off very slowly. A few sheep were shown, which made about 9d. per lb.

BANBURY FORTNIGHTLY FAIR.—There was a good supply of sheep, and the demand was good. The best, in the wool, brought about 6s. per stone. There were a good many cattle in the market. Better prices were asked and obtained.

BLAIRGOWRIE MARKET.—The market opened and closed dull in every department, except for fat cattle, which were considered dear; but all were nearly sold—three-year-old stots ranging from £21, £23, and upwards; two-year-olds, £12 to £15 10s. per head; yearlings, £3 to £9 10s. At the auction mart, fat beef gave from 10s. to 10s. 6d. for first-class, and 8s. 6d. to 9s. for secondary qualities, per Dutch stone. Fat sheep gave 7d. to 8d. per lb., and pigs from 6s. 9d. to 7s. per stone.

BOSTON FAT SHEEP MARKET.—Only a very small supply, which sold readily at from 8d. to 8½d. per lb.

CARLISLE FAIR is generally looked upon as the most important one for horses held in the Border city; but this year there was a great falling off in the show. During the week some heavy sales have been effected, principally in dray horses, for which dealers were willing to pay high rates. Consequently the bulk of the business was done before the market commenced, and this deteriorated from the business character of the market. The agricultural horses exhibited included some nice specimens of the equine tribe, but these were bought up at once, and afterwards the inferior horses sold slowly, and at comparatively low figures. Of hacks there was a poor show, and the same remark will apply to ponies. The two latter classes, however, were seldom inquired for, buyers evidently wanting heavy horses, and these of the very best class. For dray horses the figures paid in the market and on the morning of the market ranged from £35 to £40, £45, and even £50; agricultural horses, £20 to £25; ponies, £0 to £12 10s. each.

DORCHESTER FAIR was pretty well supplied, sheep excepted, and the few of these on sale were of an indifferent quality. Cows and calves realised from £14 to £22; barren mares from £11 to £16; fat bullocks from 11s. to 12s. per score; mutton from 7d. to 8d. per lb. In the horse fair the collection of animals was small, and from 30 to 50 guineas was asked for cart horses, from 45 to 55 guineas was wanted for ran horses; some capital colts were on sale.

DUMFRIES FAIR, from time immemorial, has been the most important for the sale of horses that is held in the commencement of the spring on the north side of the Tweed and Sark. There was an excellent show of draught horses; on some previous occasions there have been a large number of animals brought forward, but the quality has seldom been surpassed. Nearly the whole of the stock was in dealers' hands, the local dealers having, as the custom now is, been scouring the district for weeks, purchasing the best horses that farmers had to sell. The business commenced early and with great briskness, the best young, fresh, and powerful draught horses being quickly bought up. The transactions were chiefly between dealers, not many farmers buying horses. After midday the demand grew slack, and sales were slower of being effected; still, a large number of animals changed owners. Few saddle or harness horses were shown, and these were mostly inferior. Ponies were scarce, and there were few draught colts and fillies shown to breeders. Prices were at least 10 to 15 per cent. up from the Rood fair in September. First class draught horses were selling from £50 to £70, and in a few instances to £80, and in one case to £90. Good useful young horses for farm work from £35 to £48; ordinary animals from £20 to £30. The following are a few of the sales reported: Mr. M. Tennan sold upwards of forty animals, at prices from £30 to £80. He bought from Mr. Gibson, Summerfield, a three years old colt, at £75, and another of the same age at £70—both prize takers. He sold a pair of young horses at £80 each. Messrs. A. and R. Johnstone sold a horse at £58, and a pair at £115; a horse at £55; and a large number to other buyers, at prices from £30 to £53. Mr. Thomas Currie sold three mares at £60 each—altogether, he sold forty animals from that figure down to £35. He bought a two years old colt at £45, and resold him at a profit to Mr. McCall. Mr. James Clark sold a strong horse at £70, a pair of grey horses at £105, and a mare at £60. Mr. Carlisle, Messrs. sold twenty-six horses at prices from £40 to £60. Mr. Hugh Crawford sold a powerful draught horse at the high figure of £50. This animal was the best in the market. He sold a number of others at prices from £40 to £55. Mr. John Brown, Biggar, sold four three years old fillies at £50 each, and two years old colts and fillies from £26 to £35. Mr. J. Smith, Boushawdale, sold twenty-five horses at prices from £40 to £68. Mr. Dunlop sold about thirty animals from £30 to £55. Mr. McKenzie bought a horse at £63, and he sold a mare at £60, and a horse at £59. Mr. Yail, Glasgow, sold a horse at £65, and one at £60 to Mr. Dunlop; he sold a pair at £110. The latter dealer bought and sold horses from £40 to £60.

DUNFERMLINE MONTHLY MARKET.—The stock brought forward was mostly of an inferior kind, very small, and a large proportion of it consisted of stirks from Ireland. A number of cows were also in the market, and a very few fat cattle. Fat cattle brought from 9s. to 10s. per Dutch stone; cows sold at from £9 to £16, and for this class there was a

brisk demand. Irish cattle brought from £2 10s. to £5, but a good number remained unsold. There was a numerous attendance in the horse market, and many animals changed hands at high prices.

FORRES MONTHLY MARKET.—Business was generally very dull, especially in the fore part of the day; but as the dealers began to leave the markets, sellers had to submit to rather low prices. A pretty general clearance was effected in the afternoon. The following are a few of the most important sales: Mr. Mackay, Burgie, sold nine three-year-old crosses at £21, and six Highland two-year-old stots at £54; twenty two-year-old (polled) were sold at £19 10s.; thirteen stots at £23 10s., and a heifer at £30; three two year old crosses at £20; a Shorthorn bull at £17; a fat cow at £15 2s. 6d.; a cow at £14 15s.; a cross stot and a cow for £32 the pair; a pair of cross queys for £30; five two-year old cows at £17 5s.; nine two-year-old crosses at 20 guineas each; a cow a £14 5s.; &c.

GRANTHAM FAT STOCK MARKET.—A very small quantity of stock; plenty of buyers were present, and a brisk competition ensued. Beef sold at 8s. to 9s. per stone, pork same price, and mutton 8d. to 9d. per lb.

LINCOLN FAT STOCK MARKET.—A short supply. Wethers 9d. per lb., beef 9s., and pigs from 8s. 3d. to 9s. per stone.

MEIGLE MONTHLY MARKET.—There was an excellent display of very superior fat cattle; and, with the exception of a few lots, all were sold at what dealers declared to be very high prices. The market was consequently stiff from the beginning to the close. The best beef gave 10s. 6d., and secondary 8s. to 9s. per Dutch stone. The best three-year-old bullocks, in prime condition, sold from £22, £23 10s., £25, up to £29 per head; secondary, from £18 10s. to £20 and £22. Two-year-olds in good order, from £16, £18, and £20. Lean cattle of the same age, £12 to £13. Yearlings ranged about an average of £8; but of the latter two classes there was but a small supply, and no special demand, owing to the scarceness of fodder and the inferior quality of turnips, arising from the effects of frost.

MILNATHORT MARKET.—The stock was not up to the average, and there were no prime fat animals in the market. Best quality sold at from 8s. to 9s. per imperial stone sinking offal. Several transactions in lean stock were speedily effected, while others left the market without changing owners. Milch cows generally met with a ready sale at prices varying from £9 to £18. The following are a few of the sales: a lot of stots at £18 10s.; a lot at £18; a lot at £16; a lot at £15, and a milch cow at £18; three two-year-old stots at £13. In the sheep market, Mr. Hamilton, Tarhill, sold a lot of two-year-old crosses at £1 18s.; a lot of Cheviot ewes at £1 12s.; a lot of cross hogs at £1 3s. Several milch cows left the market without changing owners, from the high prices asked.

MODBURY GREAT MARKET was slackly attended, owing to the severe cold. Supply of cattle was also small, but business generally brisk. Fat cattle 65s., inferior 60s. per cwt., sheep 7d. to 8½d. per lb., cows and calves £14 to £30 per pair.

MORETON GREAT MARKET.—Owing to the extreme cold, and small supply of cattle, high prices were asked, but no particular change from late markets. Sheep pens not all filled, with dull sales.

NORTHALLERTON FAIR.—Hunters were scarce, as a number had been sold in the country. A good show of draught horses had ready sale, at £42 to 50 gs. each. Harness and also carriage horses were eagerly purchased at £60 to £85 each. We had a good supply of fat cattle, which sold at 8s. 6d. per stone, plenty of buyers attending the fair. Lean stock was not in much demand, and much remained on hand. In-calfing cows had fair sale.

RUGBY FAIR.—The prices made were, for beef, of which there was a short supply, from 7d. to 7½d. per lb. Mutton was very scarce, at from 8½d. to 9½d. per lb. Milch cows were rather lower in price, and a short supply. Store beasts were in greater demand, a few useful barren beasts changing hands at higher prices.

SHREWSBURY FAIR.—There was a good show of stock, both cattle and sheep, but the business was heavy, and prices hardly so good as at the last fair. Beef realised from 7d. to 8d. per lb., and Mutton from 8d. to 8½d. High prices were

asked for pigs, of which a good many were shown, but a large number were sent home unsold.

SLEAFORD FAT STOCK MARKET.—Small show of sheep, which met with a brisk trade. Fair show of beef, which was readily sold. Good show of pigs. Mutton from 8½d. to 9½d. per lb., best beef from 9s. to 9s. 6d., second quality from 8s. 6d. to 8s. 9d., and pork from 8s. 6d. per stone.

SWINDON MONTHLY MARKET.—Fat sheep sold at from 5s. 6d. to 6s. the stone, and beef at 12s. to 13s. 6d. per score. Beef met with a slow sale at slightly lower rates.

IRISH FAIRS.—**MACROOM:** Strippers sold at from £8 to £12; springers from £8 to £14; year and a-half heifers £6 to £9; calves from £1 10s. to £4 10s.; bacon pigs rated at 56s. per cwt.; store pigs, which were generally high, from £1 to £2 10s. There was very little demand for store sheep; mutton sold at 7d. per pound.—**NAVAN:** Prime beef might be quoted at from 63s. to 67s. 6d. per cwt.; second and inferior 54s. to 56s. 6d. per cwt. Owing to the severe frost there were not many far advanced springers exhibited for sale, but those that were fetched very high figures, some realising as much as £26 5s. each. Strippers were not in great demand. Three-year-old bullocks rated at from £16 to £25 each; two-year-olds, £8 16s. to £11 10s.; yearlings, £3 10s. to £5 15s. There was a very good supply of mutton, which may be quoted at 7d. per lb.; ewes, fat, £2 15s. to £3 10s. each.—**DUNDALK:** Top quality of prime beef averaged from about 6d. to 6½d. per lb.; inferior, 5d. to 9d. Three-year-old stores rated from £10 to £12; two-year-olds from £8 to £11; yearlings from £4 to £6; strippers from £7 to £11, and in good demand. Dairy cows in limited supply. **HOSPITAL:** Strippers brought £12 to £17 each. In-calf heifers were not considered good enough for our desires, but what were sold brought from £13 to £18; two-year-old heifers, £9 to £11; yearlings, £5 to £7. Several large lots of hoggets brought from £2 10s. to £3 15s. Store pigs sold freely at advanced prices according to size. The business of the day seemed so satisfactory to all that the success of these important fairs may be looked on as certain. The pig fair on Friday last was also well attended. Heavy bacon went slowly at 64s. to 66s.; Berwickers were in good demand at 58s. per cwt.

STOCK SALES.—**EDINBURGH:** The best class of bullocks sold from £22 to £27 10s. a-head, a great number at £17 to £20; small heifers down to £12; cows, £11 to £21 10s. The sheep consisted mostly of hoggs and black-faced wethers. The best class of hoggs sold from 40s. to 48s. a-head, smaller sorts 34s. to 38s., crosses 30s. to 38s., small black-faced wethers 25s. to 38s., black-faced ewes 24s. to 30s., half-bred ditto 44s. to 49s. Fat calves from £3 10s. up to £7 2s. 6d. Pigs from 35s. to £5 a-head.—**HADDINGTON:** Sheep sold from 39s. 9d. to 50s. 9d., hoggs 41s. to 49s., smaller sorts 38s. to 34s. 6d., Cheviot ewes 43s. 6d. to 47s. 3d., rams 42s. 6d. to 71s.; cattle from £20 10s. to £28 7s. 6d., smaller sorts £12 5s. to £19 5s., queys £12 5s. to £20 7s. 6d.; calves from 17s. to 66s.; pigs from 58s. to 130s.—**HAWICK:** Half-bred wethers sold from 42s. to 54s. 9d., Cheviot wethers 81s. to 46s., half-bred ewes 44s. to 66s. 9d., Cheviot ewes 27s. 6d. to 47s., half-bred hoggs 35s. to 48s. 9d.; fat cattle £13 to £27 5s., milch cows £11 7s. 6d. to £22. Mutton may be quoted at 7d. to 9d. per lb.; beef, 8s. 6d. to 8s. 9d. per stone.—**JEDEBURGH:** Small heifers sold from £12 15s. to £15, West Highland bullocks £12 5s. to £12 7s. 6d., bull £27 6s., cow and suckler £26, milch cows £15, calves 26s. to 55s. 6d. A number of lots of small hoggs 41s. 3d. to 45s., young sheep 30s. to 60s., half-bred ewes 26s. to 46s. 6d., tups 53s. 6d. to 76s.; fat pigs £3 3s. to £11 7s. 6d., shotts 30s. to 46s., young pigs 18s. to 28s.—**DALKETH:** Cheviot and half-bred wethers, 46s., 47s., 53s. 3d., 57s.; best hoggs, 52s., 53s. 3d., 55s. 3d., 59s. 6d.; smaller kinds, 46s., 43s. 9d., 44s. 3d., 46s. 3d.; Cheviot ewes, 32s. 6d., 36s., 38s.; black-faced ewes, 25s. 9d., 26s. 3d., 27s. 3d.; tups, 52s., 62s. 6d., 72s. Best cattle sold from £22, £22 10s., £24 7s. 6d., £24 15s.; other sorts ranged from £13 7s. 6d. to £18, and up to £20 17s. 6d. One pig, 106s.—**EARLSTON:** Best bullocks made from £24 to £30 each, or 9s.; secondary, £17 to £20, or 8s. 3d. per stone; best heifers, from £17 to £22; bulls, from £16 to £26 each. Half-bred Dinmonts, from 44s. to 55s.; Cheviots and crosses, from 38s. to 48s.; ewes, 32s. to 36s.; hoggets, 34s. to 49s. Top price of mutton, 9½d.; current, 8½d. per lb. Pigs made from £2 5s. to £5 10s.; skins, from 3s. to 7s. 3d. each.—**ATB:** 3 Ayrshire calving

cows, from £7 to £8 10s.; 9 Ayrshire fat cows, from £13 7s. 6d. to £16 10s.; 6 Ayrshire fat cows, from £11 10s. to £13 10s.; 12 Ayrshire fat cows, from £9 10s. to £11 5s.; 7 Ayrshire heifers, from £14 to £16; 6 Galloway bullocks, from £15 to £23 12s. 6d.; 4 Galloway heifers, from £14 2s. 6d. to £19 10s.; 4 Galloway cows, from £15 5s. to £17; 1 Galloway bull (stock), at £10 10s.; 6 Ayrshire bullocks, from £17 7s. 6d. to £20 15s.; 3 polled bullocks, from £16 2s. 6d. to £20 15s.; 3 polled bullocks (store), from £11 10s. to £12 10s.; 5 cross bullocks (store), from £11 10s. to £13 15s.; 7 Ayrshire bulls, from £12 to £19 2s. 6d. Sheep, cross hoggs, from 35s. 3d. to 44s. 6d.; Cheviot wethers, from 37s. to 41s. 6d.; Cheviot ewes, from 23s. to 45s. 6d.; black-faced wethers, from 44s. 6d. to 50s.; black-faced ewes, from 17s. 6d. to 35s. 3d.; Leicester ewes, 48s. to 54s. 1 pig at £9.

SALE OF SHORTHORNS.—The spring sales in Aberdeenshire of Shorthorn bull calves began by public offer of bulls belonging to and bred by Mr. Marr, Cairnbrogie, and Mr. Campbell, Blairton. Prices were fair, and the result of sale was as under:—Mr. Marr's stock: Livingstone, calved 1st June 1869, Mr. Leask, Swanford, 26 guineas. Forerunner, red, calved 12th January 1869, Mr. Marr, Hatton, Cruden, 23 guineas. Alexander, red, calved 19th January 1869, Mr. Mackie, Mains of Elrick, Ellon, 23 guineas. Mechi, red, calved 16th February 1869, Captain Volume, Longside, 26 guineas. Horatio, red, calved 8th March 1869, Mr. Strath, Coldhome, 30 guineas. Formartine, red, calved 10th March 1869, Mr. Gibson, Brahead, Cruden, 19 guineas. Buchan King, red, calved 13th March 1869, Mr. George Walker, Birkenhill, Turriff, 33 guineas. Buchan Prince, roan, calved 23rd March 1869, Mr. Cock, Crichtie, 21 guineas. Briton, red, calved 23rd March 1869, Mr. Kilgour, Ardlin, Ellon, 17 guineas. Charley O'Malley, red, calved 24th March 1869, Mr. Middel, Tillybrex, 17 guineas. Fortune, red, calved 31st March 1869, Mr. Alexander Simpson, Little Elrick, Old Deer, 29 guineas. Lord Lovel, red, calved 7th April 1869, Mr. Brand, Auchentain, Cruden, 23 guineas.—Mr. Campbell's stock: Gladstone, red and white, calved December 1868, Mr. Slessor, Strichen, 30 guineas. Captain Barclay, roan, calved 20th January 1869, Mr. Lind, Laverockbrae, Taves, 23 guineas. The Pope, roan, calved 27th January 1869, Mr. Clark, Orkney, 34 guineas. The Cardinal, roan, calved 25th January 1869, Mr. Meikle, Crostone, 28 guineas. The Bishop, red, calved 29th January 1869, Mr. Penny, Shanness, Old Deer, 20 guineas. The Priest, red, calved 6th February 1869, Mr. William Gray, Culterculen, Foveran, 30 guineas. Nonpariel, red and white, calved 27th March 1869, Mr. William Hay, Haddo, Crimond, 17 guineas. Buchan Hero, white, calved 6th April 1869, Mr. Kiloh, Inverveddie, Longside, 16 guineas. Blacher, red, calved 28th February 1869, Mr. Burnett, Mains of Philorth, Fraserburgh, 12 guineas.

SCOTCH SHORTHORNS.—The second annual sale of Shorthorns at Mr. Cochrane's farm, Little Haddo, Aberdeenshire, was fairly attended last month. Ten yearling bulls averaged over £30 a-head; the highest brought 40 g., and the lowest 17 g. An old bull realised 35 g. Seven heifers averaged £30 a head; the highest 36 g., and the lowest 17. The highest priced bulls were those after Marmaduke, the winner of two second Highland Society's prizes and Aberdeenshire Challenge Cup.

SALE OF SHORTHORNS.—The small herd of Shorthorns at Lunc Bank, late the property of Mr. Houseman, were sold by auction, by Mr. Vince. The 10 animals realised on an average only £28 each. White Strawberry, 21 g.; Wild Rose, 29 g.; Hartforth Strawberry, 34 g.; Pride of the Harem, 30 g.; Knight of the Harem, 34 g.; Hartington, 40 g. (the highest price obtained); Blencow 22 g., Cloth of Gold 12½ g.

MR. DUCKHAM'S SECOND PERIODICAL SALE OF HEREFORDS was held on the Hereford Candlemas Fair day; but the prices obtained have not been published, and we hear that very few of the lots put up were really sold.

THE BANBURY HORSE SHOW took place the first day of the fair. For the best cart horse, above four years old, £10, Z. Stilgoe, Adderbury; commented, T. E. Beridge, Pimlico Farm, Tasmore; 10 entries. For the best cart mare, above four years old, £5, J. Bury, Hook-Norton; commented, J. Bliss, Waddington; 9 entries. For the best cart

colt, under four years old, £5, W. Fairbrother, Burton Dassett; commended, H. G. Coldicott, Lower Heyford, and W. Denchfield, Easington; 16 entries. For the best cart filly, under four years old, £5, H. Checkley, Wykham; commended, R. Nicholls, Goldington, Bicester, and Gidding, Hook-Norton; 9 entries. For the best cart colt or filly, under two years old, £5, N. Stigoe; commended, Hiorns, sen., Chacombe; 12 entries. For the best hunter, over five years old, £10, W. Golby, Radway, Kineton; commended, T. Sargeant, Churchill, Chipping-Norton; 11 entries. For the best hunter, under five years old, £10, E. Bliss, Maidford, Daventry; commended, Newitt, Westbury, Buckingham; 9 entries. For the best hackney, not exceeding fifteen hands one inch and a half high, £5, J. E. Parsons, Charwelton, Daventry; commended, J. Johnson, Fawley, Daventry; 11 entries. For the best colt not exceeding fifteen hands high, £5, J. Robbins, Tachbrook, Warwick; 12 entries. The judges were Messrs. Elliott, Heathcote, Worcester; Perceval, Wanford, Peterborough; Potter, Witton, Birmingham; and E. Stanley, Birmingham.

THE CONTAGIOUS DISEASES (ANIMALS) ACT.

A FARMER FINED £25.

It will be remembered that some time ago a case came before the Norwich magistrates, in which Charles Huggins, a farmer and cattle-dealer, residing at Banham, in this county, was summoned, on the information of Mr. Smith, veterinary-inspector, for exposing on Norwich Hill a number of cattle affected with the foot-and-mouth disease. The magistrates being of opinion that they had no jurisdiction in the case, declined to hear it, and the Court of Queen's Bench was afterwards applied to for a mandamus. The matter was brought under the notice of the House of Commons on Tuesday night by Mr. Clare Sewell Read, who asked the Vice-President of the Council if he was aware that such doubt existed as to the power of summary jurisdiction of justices under the Contagious Diseases (Animals) Act that the Norwich and other magistrates had declined to hear any summonses under the Act, and if he would take steps to remove the uncertainty which now existed; and if, when the local authorities asked information from the Veterinary Department of the Privy Council, an answer, stating "that it is not within the province of this department to interpret an Act of Parliament," was all the aid local authorities were to receive from the Privy Council in carrying out the Act and orders for suppressing contagious diseases among cattle. Mr. W. E. Forster replied that the Privy Council officers were aware that some doubts had been expressed as to whether a summary jurisdiction was enacted by the Act of last Session; though he could not suppose that there was any doubt at all as to whether it was intended to do so. They had consulted the law officers of the Crown, and were advised that such summary jurisdiction did exist. They were aware that the magistrates of Norwich, among others, had refused, for a time, to issue summonses; but an appeal against such a decision had been heard in the Court of Queen's Bench, which Court had made a rule absolute directing the issue of such summonses. Under these circumstances there would be no necessity for taking any steps to remove uncertainty. As to the second question, it had never been the intention nor the practice of the Privy Council to refuse assistance in carrying out this difficult Act of Parliament. As to the reply to a letter which was referred to in the question, he had looked and found that there was one letter that by pure accident merely contained the statement that had been mentioned; but generally speaking, when no interpretation of an Act had been given, it was the practice at the Privy Council Office not to attempt to give an interpretation, as to pursue such a course would only mislead, because it was not an interpretation that could have any force in a court of law. But the officers of the Privy Council were directed to give all the assistance in their power; where there was any question as to facts, they were to answer it, but they were simply to decline to answer as to interpretations of the law when such interpretations would be misleading.

The case accordingly came on for hearing at the Guildhall on Thursday, before Mr. W. J. UTREN BROWNE, and Mr. J. M. VENNING. Mr. Huggins was summoned at the

instance of Mr. W. Smith, veterinary-inspector, under the Contagious Diseases (Animals) Act, 1869, for unlawfully exposing for sale in the Norwich Cattle Market, on the 20th of November last, a certain number of animals, viz., 16 oxen affected with the foot-and-mouth disease, contrary to the provisions of the said Act, whereby he had incurred a penalty not exceeding £80.

After hearing the evidence,

Mr. BROWNE said: We consider this case has been clearly proved, and we shall inflict a penalty of £25, with the costs, £3 16s.

MARTINGALE.—None loved the Town Moor better than poor James White, or "Martingale." Thirty years ago he was in his zenith, with his book on "Country Scenes," and as a contributor to *Benley*; and his powers knew no decay. He was quite the Prose Poet of Nature, and no man that we ever met with was so keenly alive to her beauties, and could word-paint them so well. Edlington Wood, which seldom fails to produce a fox when the Fitzwilliam call, was one of his special haunts when he was well and vigorous. He seemed to know the haunt of every badger, the name and the note of every bird, and the *genus* of every wild flower that grew on its banks and glades. He liked to wander away from Doncaster "when the mavis and merle were singing," and regardless of the prosaic days in which his lot was cast, take his dinner with him, and "have a word with the woods." Weaving an old legend into shape pleased him best. The deserted hut, where a poacher had lived and died, a very lord of the soil to the last, seemed to conjure up in his mind a network of dark romance; and Sherwood Forest and Merrie Barnsdale were themes which never palled. His racing writings were very numerous; but as he rarely left Doncaster, he was too often compelled to take his description second-hand. In dealing with current racing topics he was far too discursive, and pitched his key-note so high, that matter of fact readers grumbled, that after wandering through such a labyrinth of fine words, they could hardly find one grain of fact. His strength as a turf-writer lay in his "Turf Characters," and his recollections of the Doncaster past. If he was not in the *Gazette* office hard at work at his beautiful small manuscript, with his voluminous velvet cap on his head, or in a chancel-seat in the old church, or in Edlington, or Wheatley, or Sprothorough Woods, Doncaster Moor was a sure find for him, and he was pretty certain to be talking to himself. Seeing those races, and the gallops as well, was his delight, and he generally stationed himself, from old usage, on the St. Leger day somewhere between the Red House and the Hill, to catch the first symptoms of the "pace complaint." St. Leger after St. Leger was to him a scene he could unfold with a master's hand. Every little incident from the Duke of Hamilton's day had been treasured and invested with significance; and as John Jackson, the celebrated jockey, lodged with him for a series of years, he had an opportunity of "posting himself up" during the week, which he took care to use to the full.—*Saddle and Siroin*, by THE DRUID.

THE AGRICULTURAL HALL COMPANY (LIMITED).—At the general meeting called for March 1st, the Directors' report will declare a dividend of 8 per cent. The receipts by the Cattle Show of 1869 are put at £4,717 11s. 2d.

DEATH OF MR. ADCOCK.—This very popular Northamptonshire character, died on St. Valentine's day, at his residence, Farndish, near Wellingborough, in his 67th year. He accumulated a fortune in an extensive business in London when a young man, and retired some twenty years ago to Farndish, where he farmed extensively, as well as at Wollaston. During the last seven years he had collected and bred some first-class Shorthorns, and was a frequent and well-known attendant at most of the great sales. His favourite hobby was to feed six Hereford and six Shorthorn bullocks, at Christmas, which were considered one of the sights at the Northampton Fat Cattle show. Paralysis struck him down some twelve months ago, and though he got out he never recovered. No man was ever more popular both at home and abroad, and his death will be felt by a large circle of friends. We believe his Shorthorn herd will in due time come to the hammer.

A TERRIBLE TITLE.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—Your agricultural contemporary of the 24th January, speaking of the herd of Mr. Oliver, of Sholebroke, communicates the following intelligence:

"A red yearling bull, Satan (27,430), lately left the Sholebroke Lodge herd for joint service in the herds of Mr. Levi B. Bagshaw, of Newton, Kettering, and Mr. Charles Bayes, also of Kettering. Got by Cherry Grand Duke (23,554), the son of Grand Duke 7th (19,877) and Cherry Duchess 9th by Third Grand Duke, the grandam and great-grandam being respectively by Second Grand Duke and Grand Duke; he is from Satanella by Seventh Grand Duke. He is likely to make his mark in Mr. Bagshaw's herd."

I need not say that this startling intelligence has created a great sensation in the States, and I send you the sentiments of the nation upon it, as transfused into verse by one of our greatest poets—a Representative man, of exalted mind and unaffected piety.

I trust that your readers "Love straightforward verse,
And will take it, like marriage, for better for worse."

I am, sir, yours respectfully,

Buffalo, U.S.A.

LOT BOUSFIELD.

"At length—ride last 'Beal's Messenger'—ends
All hope for Bates cattle, their breeders and friends;
For Satan who, twelvemonths ago, from his hold broke
To visit his snug little farmstead at Sholebroke;
Now, leaving the lands he has lately encamp'd on,
To seek 'pastures new' in his shire of Northampton,
Turns Bates, with a view his position of bettering.
And makes a descent, in disguise, upon Kettering.
He came, we are told, like a *serpent* of old,
But practice has made the deceiver more bold;
For in these later days of iniquity fall,
He comes, like great Jove, in the shape of a bull.
To do all the evil he can in his creed,
So he comes as a bull of Kirklevington breed!
Not *incog.*, but beneath an avowed transformation,
Arch-enemy he of the bovine creation.

Not thus his confederates came to the States,
But as Shorthorns earth-born, of the breed 'r'clept 'Bates',
Bulls, heifers, and kine of the blood genu-ine,
Calculated the best of all strains to combine;
And with titles to which, whatsoever the race is,
John Bull still ascribes all perfections and graces.
And though we soon found that the breed wouldn't do,
In spite of grand names, and long pedigrees too;
And ever and aye, grimy nose or horn stout
Suggested uncanny connexions with Cloutie.
We dream'd not what cost us a whole Californy
Of gold, were indeed but *bêtes noires* from Auld Hornie.

This brood of Old Nick's, when roaming from Styz,
No longer on Yankee locations shall fix,
But may go with the herds of Van Diemen to mix.
Hibernia, Australia, refuse all admission
To bulls which would doom the best herds to perdition;
And for Jove-sping Satan we thus prophesy of him
Europa, disgusted, will shortly fight shy of him.

Vainly that Evil Intelligence, 'Bel,
Would throw round these bovine infernals the spell
Of his own fertile fancy, until they expand
Into Shorthorns commanding, majestic and grand,
With pedigrees noble that none can impeach:
What though his use of all figures of speech,
All tools by which thought is to elegance wrought,
From critics impartial the tribute extort
That he *nihil tetigit quod non ornavit*,
His wand-Nickromancing, however, he may wave it,
Though potent to call up presentments unreal,
Can ne'er rule the issue of show-yard ordeal.
The prize-rings expose the consummate delusion,
And whelm the Bates' heroes with constant confusion.

Then let noble lords who implicitly follow
The oracular grunt of the Easton Apollo,
Still, throw, as they may, their loose thousands away
On these imps of the De'il broken loose for a day:

In vain will be all their endeavours to palm
These brutes on the world as the things for the farm—
We find knowing breeders invoking a plague on
Such bulls as, in double sense, cattle of Dragon,
Which, till there's a change in Old Harry's stock radical,
Ne'er can be more than toys aristocratical.
De'il-spawn's a pill they will not have at *aid*,
But go in for the blood of old Waraby still.

Unfortunate Bagshaw! unfortunate Bayes!
Who've both undertaken the Devil to raise;
I fear that ye'll both have the Devil to pay—
The foul fiend is more easy to raise than to lay,
And calves *in futuro* 'his mark' will betray.
And Sholebroke, beware! for sages declare
Of him, whom to name polite circles forbear,
That he will, when accounts he is ready to square,
Not alone have his due, but will render it, too,
To subjects who pay him allegiance true.
And, whatever the debt he may seem to forget,
He has somewhere (of this heavy odds we may bet)
A Roland in store for his Oliver yet.
With a stroke of his claw, he will settle the score,
So as not to have 'Oliver asking for more.'"

THE "ACTION" OF THE CENTRAL CHAMBER OF AGRICULTURE.

Whether we look to the effort or the result, there never was a better justification of the sarcasm "How not to do it" than was afforded by last week's meeting of the Council of the Central Chamber of Agriculture. And the example was all the more remarkable for the contrast offered by another agricultural meeting on the previous day. The Farmers' Club, a company of practical farmers and land agents, with one or two landowners, had assembled on Monday to discuss an important department of farm practice, and they proved their competency throughout—both lecture and discussion being full of serviceable information and trustworthy guidance. On the Tuesday a monthly meeting of the Central Chamber of Agriculture, including nearly a score of members of Parliament, and gentlemen deputed by two dozen provincial chambers, assembled to consider resolutions which had been properly arranged for discussion by a previous "business committee, after a sort of previous digestion, which, as we understand the somewhat complicated procedure, the various topics undergo in the country before they come up for final decision in town. The two principal subjects which were thus arranged for discussion at the latter meeting were Road Maintenance and Agricultural Statistics. On the first of them, resolutions were offered affirming the policy of the simultaneous abolition of turnpike trusts, their debts being liquidated by the national exchequer, and the future maintenance of the roads being made to fall upon "the general wealth of the districts through which they pass." These resolutions and an amendment to them having been submitted to the meeting, Mr. Knatchbull-Hugessen, M.P., made a speech, in which the intentions of the Government on the subject were to some extent announced; and it was thereupon immediately proposed by Sir Massey Lopes, Bart., M.P., that as "Government are going to take up local taxation, to be followed by the road question, it was inexpedient for the Chamber to adopt or recommend any proposal until the Cabinet had announced their promised scheme." So "Sir G. Jenkinson withdrew his resolution, and Mr. Jabez Turner withdrew his resolution;" and, although Captain Craigie urged that they had met that day to give an opinion, and Mr. Hugessen had stated he was anxious to know what were the opinions of the delegates on the subject, the whole plan arranged by the "business committee" fell through and disappeared, and the great organisation for urging the views of agriculturists upon Government obviously failed of its intended purpose.

What, then, was done in connection with agricultural statistics? This, too, had been everywhere discussed and rediscussed for years, and must, we should think, at length be ripe for a definite and conclusive utterance. The first amendment was rejected by a considerable majority; the second was lost by 11 to 7, and finally the original motion was lost by a majority of one! Here, again, we submit, is a remarkable ex-

ample of the failure of the elaborate organisation which was to have urged the opinions of agriculturists upon the attention of the Government.

But really, the kind of reasoning and argument which appeared to command attention at this meeting is even more significant than the result to which it led. If the leading men of the Central Chamber of Agriculture, members of Parliament included, are afraid of knowing the facts of the case—or afraid of letting them to be known—if they must be sure beforehand of what the facts will teach before they will consent to any attempt at their collection!—if they think with Mr. Arkell that “the purpose” for which information regarding facts is sought has any bearing whatever upon the policy of letting truth be known—if the idea that knowledge is power is to be considered, as Mr. Albert Pell, M.P., appears to think

it, “a senseless theory”—then we may congratulate the Central Chamber on their discussion of the agricultural statistics question. It has landed them in just the sort of weak and helpless muddle in which those who hold such notions must feel themselves at home. To an outsider, however, who believes, upon the contrary, that all attempts to make men know their actual circumstances are to be encouraged—that the truth should be sought for, utterly regardless of what it may turn out to be—and made known, never minding what it is—and that the love of ignorance is a great mistake—it appears as if the Chamber of Agriculture was discovering the agricultural mind to Government in a very unfortunate way indeed.

However, let us hope for the best. They are to discuss the policy of *Agricultural Education* at their next meeting!—*The Gardeners' Chronicle and Agricultural Gazette*.

REVIEW OF THE CORN TRADE DURING THE PAST MONTH.

February fill-ditch has not kept up its usual character, but brought us a little winter of unusual severity, so that the navigation of the Thames was stopped for a week; but the frost now seems to have left, and we wait to see its effects. It certainly has been more of a check than vegetation seemed to require, but may leave benefits behind it. The plough was stopped, and the work of other implements, but the soil has been penetrated deeply, and we may have a finer tilth than the harrow could have effected, and a good beginning for the planting of spring corn. The wheat has indeed been unprotected, and some fears are expressed as the consequence; but it is one of the hardiest of plants, and may yet yield abundantly. In ordinary times the sudden arrival of such a frost would have sent prices up; and we have, indeed, fluctuated as regards wheat, but the balance has been against the trade fully 2s.—the large stocks here as well as in some foreign ports making millers very leisurely in their purchases from not anticipating any immediate advance. Yet it was reasonable for farmers to expect some compensation for a decidedly short crop, as shown by the recent particulars published by the *Mark Lane Express*; from which we infer that our home produce, out of 3,688,357 acres, has only yielded 11 million quarters, or thereabouts, for so perfect plan has yet been adopted to give us a fully reliable account. The worst features of the case is that every corn crop was a bad one, and we all know that all kinds of grain but malting barley has been bringing very bad prices. If this state of things is to continue, farmers will have to look more closely to their rents, especially if overrun with game; or cultivate more stock, as meat has been fetching such high rates, which still seem likely to rule. We grant that, as regards wheat, for several years England in her yield has stood about first. Hence the foreign imports, if wanted, could not have been so liberally sent, but now America and Russia have had a good yield, and other places about their usual growth; so we have for the time been fairly overdone. And though we calculate, notwithstanding present heavy stocks, we shall want about 5 million quarters by the end of August, there seems little doubt but that it will come, unless foreign houses are dissatisfied with present prices and prospects. Nevertheless, we have, in the course of a large experience, found so many things in favour of unseasonably low prices, that we should much prefer waiting to a certain sacrifice. The new crop is in its infancy; it has many trials to pass through: and who is certain of a favourable gathering? The following rates were recently quoted at the places named: White wheat at Paris 48s.,

red 46s., white at Bordeaux 47s., average rates of the best quality in Belgium 45s. to 46s. 6d., red at Hambro' 39s. to 42s., white 43s., red at Stettin 39s., at Cologne 39s., at Rostock 40s., at Romanshorn in Switzerland 49s., at Berlin 41s., at Vienna 42s., red at Pesth in Hungary 38s. to 37s. 6d., fine new white at Dantzic 49s., cost freight and insurance, old to 55s. ditto, at Alexandria 38s. 6d. free on board, San Francisco 44s. to 46s. cost freight and insurance, No. 1 spring wheat at New York 36s. 9d. per 480lbs., No. 2 36s., No. 3 34s., white Michigan 45s., winter wheat at Montreal 33s. per 480lbs., spring 33s. 6d.

The necessities of the press obliging us to omit the last Monday in January, we commence our review on that day and close it on the 21st February.

The first Monday of this second month of the year began on moderate arrivals of wheat, both English and foreign. The morning's show on the Essex and Kentish stands was improved, both as to quantity and condition, in consequence of the frost of the previous week; but a thaw having then set in, the market became dull, and sales could only be made at 1s. per qr. decline. For the same reason great heaviness prevailed in every description of foreign, holders being generally disposed to accept a like reduction from the previous Monday's rates. With but a moderate quantity of floating cargoes on sale, the demand was slack, holders asking the previous terms. The heaviness of the London trade was fully responded to in the country, the entire week having been wet. Some reports, indeed, quoted no change, but it seemed, from the want of business, several noted a decline of 1s., and about an equal number were down 1s. to 2s.; Liverpool declining 2d. to 4d. per cental for the week, or 10d. to 1s. 8d. per qr. Neither Edinburgh or Glasgow were able to sell at the previous rates, both noting a decline of 1s. per qr., with very little passing. Though a decided fall on the best wheat was not reported in the Irish markets, secondary qualities gave way both at Dublin and Cork.

On the second Monday there was more English as well as foreign wheat reported. The show of fresh samples from Kent and Essex was fair as to quantity, but very bad as to condition, from the damp weather in which it was thrashed. This, coupled with the idea of the permanent departure of the frost, had a most depressing effect on the market, and for a long time millers seemed indisposed to bid at all; but on finding factors anxious to make way, and ready to submit to large concessions, business was finally transacted pretty freely at a decline

of 2s. to 8s. per qr. The sale of foreign was almost suspended till holders were willing to accept 1s. to 2s. per qr. lower rates than on the previous Monday, more especially for the low qualities of American and Russian. Floating cargoes also declined 1s. per qr. The country followed London this week, but not to the same extent, for on Wednesday there were indications of renewed frost, which came with great suddenness and severity. Melton Mowbray, however, and Sheffield were 2s. depressed, and a decline of 1s. to 2s. was noted at Hull, Ipswich, Sleaford, Nottingham, Market Rasen, Gainsboro', Thirsk, and Salisbury; and several yielded 1s., but three or four recovered again on Saturday, and noted 1s. advance; and Liverpool on Friday was 2d. per cental dearer. Glasgow was 6d. to 1s. down, and Leith also 1s. lower. Dublin was dull, and prices little more than nominal for the best qualities.

On the third Monday there was about the same quantity of English as previously, but less foreign; with the Thames so full of ice in the space of the five days' frost that navigation was completely stopped, excepting in very few instances. Kentish and Essex factors were little disposed to offer the few fresh samples sent up, especially as the previous week's sales could not be delivered; but all that was accessible by land recovered value to the extent of 1s. per qr.; and a similar improvement was occasionally realised in the lower sorts of foreign red, but on the whole very little business could be done. Floating cargoes, which began to give way heavily, suddenly recovered to the extent of about 1s. 6d. per qr. on fine parcels. The doubtful rise noted in London was differently viewed in the country; many places, looking upon it as temporary, only noted more firmness; others were 1s. per qr. higher, as Boston, Rotherham, Alford, Rugby, Gainsboro', Lynn, Ipswich, Manchester, Bristol, and Gloucester. Others varied prices 1s. to 2s., as Spalding, Louth, and Stockton; and a few were even more. Liverpool gained 2d. per cental on Tuesday, and lost half of it on Friday. Glasgow was rather dearer, as well as Edinburgh. At Dublin there was only a better demand for foreign qualities.

On the fourth Monday the English supply was small, and the foreign limited to two small cargoes—viz., one from Bremen and the other from Trieste. On this day the navigation of the river was resumed, the ice having sunk, and the temperature being only ordinarily cold. Very few fresh samples appeared on the Essex and Kentish stand, and these were mostly in such poor condition that they met with no attention from millers, though anything really fine was worth the prices paid on the previous Monday. The attendance was but moderate from the country, and buyers seemed to expect to satisfy themselves on lower terms; but these were generally resisted, in consequence of the short supply. Floating cargoes were dull, and lost something of the late advance. The arrivals for four weeks in London were 22,296 qrs. country qualities, 49,185 qrs. foreign, against 18,982 qrs. English, 38,302 qrs. foreign in 1869. The imports into the Kingdom for four weeks ending 19th Feb., were, 3,874,569 cwt. Wheat, 626,280 cwt. Flour, against 2,436,240 cwt. Wheat, 887,723 cwt. Flour for the same period last year. The London exports were 1,185 qrs. Wheat, 850 cwts. Flour. The London averages commenced at 45s. 9d. and closed at 44s. The general averages began at 43s. 6d., and ended at 41s. 9d.

The Flour trade has been very dragging and unsatisfactory for the four weeks, Norfolks having lost value about 2s. per sack, foreign about 1s. 6d. per sack and 1s. per brl.; the demand for the latter being little more than retail; but town prices have kept the top price to 48s., millers alleging they have to pay such high prices for the

best old Danzig and other foreign Wheat to keep up their quality.

With fair supplies of Maize through the month, prices have somewhat fluctuated, leaving the balance against values about 1s., fair quality being procurable at 27s., and excellent at 28s. These low rates have for some time been undermining the value of Beans and Peas; but as in New York rates are dearer there than here, and the only place whence large supplies can for some time come is the Mediterranean, we should not be surprised to find a rally from the present depression. Our receipts in four weeks have been 49,899 qrs., against 43,884 qrs. 1869.

Barley has come to hand very scantily, both as respects home supplies and foreign: yet the general dullness of trade appears so to have reduced the demand for Malt, that the best malting sorts have found little inquiry, and have gone back in value 1s. to 2s., and all qualities of foreign have receded about 1s. per qr.; fair grinding sorts may now be had at about 33s. per qr., or even less. The imports for four weeks in London have been 12,450 qrs. British, 28,888 qrs. foreign, against 15,103 qrs. British, 192,503 qrs. foreign at the same period in 1869.

There has been a great falling-off in foreign Oats during the month; but after a few fluctuations, prices remain much as they previously were: good fresh Swedes are procurable at 19s. per qr., and fair Russian at 18s. to 18s. 6d. With such low rates it was not to be expected any would come from Scotland, and there have been but few of home-growth and from Ireland. The four weeks' supplies were thus: native 2,747 qrs., Irish 1,940 qrs., foreign 79,017 qrs., against 2,181 qrs. English, 1,252 qrs. Scotch, 7,653 qrs. Irish, 88,403 qrs. foreign in 1869.

The supply of home-grown Beans has been moderate, while scarcely any foreign have arrived. The want of these latter has lately sent up the price of old about 2s. per qr. suddenly, from the scarcity; but the English sent up by farmers, being nearly all new and rather soft and unfit for splitting, have not advanced, though not so difficult of sale as lately, and the price has become so low—say 34s. for Mazagans. With a short crop we do not seem likely to see a further reduction, not many being expected from Egypt. This sort, lately worth only about 34s., would now bring 37s. per qr. The imports for London in four weeks were 3,186 qrs. English, 70 qrs. foreign, against 1,904 qrs. English, 11,960 qrs. foreign in 1869.

The supply of Peas has been limited; and though we had a severe frost for a week, it did not last long enough to bring a good demand for boilers, but only hardened values—say to 34s. or 35s. per qr., duns remaining dull. The English arrivals in London for four weeks were 1,969 qrs., the foreign 529 qrs., against 812 qrs. English, 110 qrs. foreign last year.

Linseed has been very firm through the month, the receipts being light, and Cakes have gone off well, from the sharpness of the weather. The frost occurring at the beginning of the Seed season has quite put it back, though Cloverseed, both red and white fine, have been high-priced, and rates have lately been advancing in France. The sale of spring Tares has also been stopped, but must soon recommence, good small spring being 37s. to 38s. per qr.

AVERAGES

FOR THE LAST SIX WEEKS:		Wheat.	Barley.	Oats.
		s. d.	s. d.	s. d.
Jan. 8, 1870.....	44 5	35 11	30	
Jan. 15, 1870.....	44 1	36 4	31	4
Jan. 22, 1870.....	43 6	36 3	30	10
Jan. 29, 1870.....	43 8	36 7	30	4
Feb. 5, 1870.....	43 3	35 8	30	8
Feb. 12, 1870.....	41 9	34 6	19	10
Aggregate of the above ...	43 1	35 7	20	6
The same week in 1869.....	50 9	47 9	28	1

Cheshire 5s. to 9s. per 252lbs.—YORK, (Saturday last) : The supplies were short ; but the wholesale price was only a trifle in advance of that of the previous week—namely, 7s. per tub of 280lbs. The retail price was 5d. per stone.

PRICES OF BUTTER, CHEESE, HAMS, &c.

BUTTER, per cwt. : s.	CHEESE, per cwt. : s.
Dorset.....156 to 160	Cheshire.....63 to 80
Friesland.....140 144	Dble. Gloucester...70 78
Jersey.....116 138	Cheddar.....70 94
Flax, per dos. ... 16 18	American.....68 76
BACON, per cwt.:	HAMS: York, old... 94 104
Wiltshire, green... 72 —	Cumberland.....94 104
Liah, f.o.b. 69 74	Irish, new .....84 112

GLASGOW, (Wednesday last).—There has again been large arrivals, upwards of 2,000 cheese being laid down. Sales very slow, but prices unaltered. Cheddars 58s. to 70s., Dunlop 56s. to 65s.

CORDEROY AND CO'S CHEESE CIRCULAR, (Thursday last).—The provision trade in general has been dull and awkward during the week. Fine butter, however, has been wanted, owing to the small arrivals (in consequence of the severe weather), and high rates for this article have prevailed. The extensive lack of employment is still to be deplored. We can only hope that as spring advances this evil will be in some degree mitigated. Supplies of most descriptions of cheese from various quarters are fully equal to the demand. Cheap cheese are inquired for, and good useful Cheshire lumps at 62s. to 68s. are saleable. Anything tender in condition or damaged cannot readily be sold. American cheese are in moderate supply; prices for the very best are firm, ranging from 70s. to 75s.; common qualities are entirely neglected. The arrivals reported since our last are 7,234 boxes.

CORK BUTTER MARKET, (Friday last).—Ordinary first quality export 136s., country 132s., second, export 130s., country 127s.; third, export 106s., country 103s.; fourth, export 82s., country 79s. Mild-cured: first quality, export 135s., country 132s.; second, export 130s., country, 127s.; third, export 112, country 109s. Currency: Ordinary Butter 10s. per cwt. less; mild cured, 10s. ditto; sponged, 2s. ditto; thirds, fourths, fifths, and sixths of kegs, 4s. less.

POULTRY, &c., MARKETS.—Turkeys, cocks 5s. 6d. to 12s., hens 4s. to 6s. 6d.; Geese, 6s. to 7s.; ditto Irish, 4s. to 5s. 6d.; Goslings, 6s. 6d. to 8s. 6d.; Ducks, 2s. 6d. to 3s. 6d.; ditto wild, 2s. to 3s.; Ducklings, 4s. to 6s.; Surrey Fowls, 4s. to 6s.; Sussex ditto, 3s. to 4s.; Boston and Essex, 2s. 6d. to 3s. 6d.; Irish, 1s. 6d. to 2s. 6d.; tame Rabbits, 1s. 6d. to 2s.; ditto wild, 2s. to 1s. 6d.; Pigeons, 6d. to 9d.; Hares, 3s. 6d. to 4s.; Widgeon, 1s. 9d. to 2s.; Teal, 1s. 6d.; Woodcocks, 3s. 6d. to 4s. 6d.; Snipes, 1s. 6d.; Gold Plover, 1s. 6d.; Black ditto, 1s. each; Larks, 2s. 3d. per dozen. Eggs, 10s., seconds 7s. 9d. per 120.

COVENT GARDEN MARKET.

We have but little change to notice in respect either of supply or price. Hothouse Pines are in somewhat better request, and some good fruit from the Azores have been offered this week, chiefly of the Cayenne varieties, for which fair prices have been obtained. Grapes are quite sufficient, comprising Muscats, Alicante, Barbarossa, and Lady Downe's. Continental imports include the usual varieties of saladings, Artichokes, Carrots, &c. The Potato market continues dull; and in consequence of the severe weather plants in flower are rather scarce.

FRUIT.

s. d.	s. d.	s. d.	s. d.
Apples, $\frac{1}{2}$ sieve.....	3 0 to 5 0	Melons, each.....	1 6 to 2 0
Cobs, $\frac{1}{2}$ do.....	2 0 to 3 0	Nectarines $\frac{1}{2}$ doz.....	1 0 to 2 0
Chestnuts, $\frac{1}{2}$ bush.....	2 0 to 3 0	Oranges $\frac{1}{2}$ doz.....	6 0 to 12 0
Suberts, $\frac{1}{2}$ do.....	0 6 to 0 8	Peaches, $\frac{1}{2}$ dozen.....	0 0 to 0 0
Grapes, $\frac{1}{2}$ lb.....	8 0 to 12 0	Pears, $\frac{1}{2}$ dozen.....	2 0 to 4 0
Lemons, $\frac{1}{2}$ 100.....	5 0 to 10 0	Fine Apples, per lb. 8 0	10 0

VEGETABLES.

s. d.	s. d.	s. d.	s. d.
Artichokes, per dozen	3 0 to 6 0	Leeks, per bunch.....	0 3 to 0 4
Asparagus, per bund.	2 0 to 15 0	Lettuces, per score.....	1 0 to 2 0
Beet, per dozen.....	2 0 to 3 0	Spinach, per bunch.....	1 0 to 1 6
Broccoli, $\frac{1}{2}$ doz.....	1 0 to 3 0	Mushrooms, $\frac{1}{2}$ pottle.....	1 0 to 1 6
Brus. Sprouts, $\frac{1}{2}$ ave.	3 0 to 4 0	Onions, green, $\frac{1}{2}$ bun.	0 4 to 0 6
Cabbages, per dozen.....	1 0 to 1 6	Parley, per bunch.....	0 3 to 0 4
Capoteaux, $\frac{1}{2}$ hund.....	0 0 to 0 0	Peas, per bush.....	75 to 100 0
Carrots, per bunch.....	0 4 to 0 6	Penns, per ton.....	75 to 120 0
Cauliflowers, per doz.	1 0 to 3 0	Pumpkins, per ton.....	4 0 to 6 0
Celery, per bundle.....	1 0 to 1 6	Radishes, per dozen.....	1 0 to 1 6
Cucumbers, each.....	1 6 to 2 0	Salsify, $\frac{1}{2}$ bundle.....	1 0 to 1 6
Endive, per doz.....	1 0 to 0 0	Scorzonera, $\frac{1}{2}$ bundle.....	1 0 to 1 6
French Beans, $\frac{1}{2}$ bund	0 0 to 0 0	Sea Kale, $\frac{1}{2}$ punnet.....	2 0 to 3 0
Garlic & Shallots, $\frac{1}{2}$ lb.	0 0 to 0 0	Spinach, per bushel.....	2 0 to 3 0
Herbs, per bunch.....	0 0 to 0 0	Turnips, p. bus.....	0 4 to 0 6
Horseradish, $\frac{1}{2}$ bundle	0 0 to 0 0		

ENGLISH WOOL MARKET.

LONDON, MONDAY, Feb. 21.—The English wool trade has ruled quiet but firm. Some demands continue to be experienced for choice qualities, including lustres and demi-lustres, so the quotations are firmly maintained. The attention of manufacturers is now chiefly directed to the public sales of colonial wool which opened on Thursday last. The attendance at this series has been good, and both home and foreign buyers have operated with freedom. Prices have consequently had an upward tendency, though no quotable advance has taken place.

CURRENT PRICES OF ENGLISH WOOL.	s. d.	s. d.
FLEECES—Southdown hogs..... per lb.	1 0 to 1 1	
Half-bred ditto.....	1 4 to 1 5	
Kent fleeces.....	1 3 to 1 4	
Southdown ewes and wethers...	1 0 to 1 1	
Leicester ditto.....	1 2 to 1 3	
Sorts—Clothing, picklock.....	1 4 to 1 5	
Prims.....	1 2 to 1 3	
Choice.....	1 1 to 1 2	
Super.....	1 0 to 1 1	
Combing, wether mat.....	1 4 to 1 5	
Picklock.....	1 1 to 1 2	
Common.....	0 11 to 1 0	
Hog matching.....	1 4 to 1 5	
Picklock matching.....	1 1 to 1 2	
Super ditto.....	0 11 to 1 0	

BRADFORD WOOL MARKET, (Thursday last).—The tone of the market is again quiet, but not more depressed than of late. Buyers of wool operate to a small extent in various classes, but only for the supply of their current requirements. The trade is looking forward with some interest to Mr. Firth's public sale this afternoon, and this induces buyers to adopt a waiting policy as far as possible, until they see whether prices are fully maintained. The opening of the London Wool Sales to-day (at which, from the short supply, an advance is looked for), and the near approach of Bristol Wool Fair have a similar influence, and at the same time cause holders—of down wools, at any rate—to be firm. Staplers generally are not willing to take less, although buyers usually try to buy on rather easier terms; and, in some cases, where dealers are wishful to quit their stocks, a slight reduction has, no doubt, to be allowed. The influence of these repeated quiet market days is unquestionably in favour of easier rates, but hitherto quotations have been, as a rule, very fairly maintained.—*Bradford Observer.*

LEEDS (ENGLISH AND FOREIGN), Friday last.—There is on the whole a quiet state in the English wool trade, but not much alteration in prices, nor does it seem likely that there will be any material change for some time. Colonial wool is in moderate demand, and prices are firm. As buyers are numerous in London, and the arrivals small, there will be a rather brisk competition for the qualities most in demand. The consumption in this district is rather below an average.

BRESLAU WOOL REPORT, Feb. 17.—We had again a moderate attendance of home and foreign manufacturers, who chiefly purchased the inferior and middle fine descriptions of Volhynian, Polish, Posen, and Silesian Wools at from 50 to 65 thalers per cwt. Some large transactions have been in the mean time effected in Charkow scoured wools at about 65 thalers, as well as in alipes, from 35 to 45 thalers per cwt. Fine qualities continued comparatively neglected, and met a very slow sale. Prices in general were very much the same as hitherto, yet owners were, in many instances, obliged to yield to the pretensions of purchasers. The whole amount of sale arises to about 3,500 cwts., whereas fresh imports were about 2,000 cwts. The result of the current London sales is looked for with great interest, as they will have a very decisive influence on the further march of business on the continent.—GUNSBERG BROTHERS.

THE OILCAKE TRADE.

LONDON, MONDAY, Feb. 21.—There is no improvement to notice in the Oilcake trade, so the general tendency of price has been in a downward direction.

	Per Ton.	Per Ton.
Linseed cakes, English.....	£11 5 0 to £11 10 0	
Do. best American, bags and brls.	10 15 0 to 11 11 0	
Do. Western.....	9 9 0 to 10 0 0	
Do. Marseilles.....	9 5 0 to 9 10 0	
Rapecake.....	6 0 0 to 6 10 0	
Cotton cakes, English.....	5 10 0 to 5 15 0	

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Princeton, N. J.

I do not know by the way of getting it changed. For I have not a "Bureau" where I can send it. I have a "Bureau" where I can send it, but I have not a "Bureau" where I can send it.

THE BRITISH FARMER'S MAGAZINE.

NEW SERIES.

VOL. LVIII.

1870.

NO. CXXXV.

PLATE I.

THE PRINCESS OF YETHOLM,

A PRIZE SHORTHORN COW.

THE PROPERTY OF SIR WALTER CALVELEY TREVELYAN, BART., OF WALLINGTON, NEWCASTLE-UPON-TYNE.

The Princess of Yetholm, a red and white cow, bred by Sir Walter Trevelyan, and calved August 10, 1864, was by Gipsy Prince (17965), out of Young Honeysuckle, by Daisy Bull 2nd (14364), her dam Honeysuckle 2nd by Ravensworth (10681)—Hepatica by Lonsdale (9305)—Fuchsia by Wizard (6688)—by Wiseton (2848)—by Walter (2811)—by Mercury (2301)—by Star (1479)—by Weallesey (1571)—by Western Comet (689)—by Phenomenon (491)—by Chieftain (135).

Gipsy Prince (17965), a red roan bull, bred by Mr. W. H. Ripley, of Lightcliffe, and calved January, 14, 1860, was by Prince Tallyrand (16765), out of Gipsy by Grand Turk (12969), her dam Ursula by Captain Edwards (8929)—Fair Rosamond, by Senator (8548)—Emily, by Sir Philip (8588)—by Premier (2448)—by Alfred (2985). Gipsy Prince was purchased by Sir Walter Trevelyan, in whose herd he has been chiefly used. Gipsy Prince has also distinguished himself on the show ground, as at the Leeds meeting of the Royal Agricultural Society of England he took the third prize in the class of yearling bulls, and first prizes during the same season at the Durham, the Northumberland, and the Tyneside meetings; while in the following year he was "the reserve" in the class of two-year-old Shorthorn bulls at the Great Battersea Exhibition of the Royal Agricultural Society.

Young Honeysuckle, a roan cow, bred by Mr. Thornton, of Stapleton, and calved on September 23, 1859, also went early into Sir Walter Trevelyan's herd, in which there are five very promising heifers out of her. One that has gone wrong in her breeding is now in training for the Christmas shows at York and Leeds in December 1870; while another is at present at Captain Gunter's at Wetherby, to be served by 3rd Duke of Wharfedale.

The following is a list of the prizes taken by The Princess of Yetholm:—Prize of £8 as the best Shorthorn cow, at the Northumberland Agricultural Society's meeting at Cornhill, in August, 1868; first premium of £10, as the best Shorthorn cow, and the Corporation Cup, value £20, as the best female in the Shorthorn classes, at the York Christmas fat show, in December 1868; first

prize of £20, as the best Shorthorn cow, and the President's Cup, value £25, as the best animal in the show-yard, at the Leeds Christmas fat show, in December, 1868; first prize of £15, as the best Shorthorn cow of her class, and the extra prize of £20, as the best animal in the female cattle classes at the Birmingham Fat Cattle Show, in November 1869; first premium of £25, as the best Shorthorn cow in her class, and the silver cup, value £40, as the best animal in the female cattle classes, at the Smithfield Club Show, December 1869. We remember seeing the Princess of Yetholm exhibited as a breeding cow at the Wetherby Meeting of the Yorkshire Society, in 1868, when she commanded no notice from the Judges; and she was also once beaten as a calf by Miss Beverley 17th.

In our report of the Birmingham Show, we said, "There travelled up from Newcastle-upon-Tyne a certain Princess of Yetholm, bringing with her a very high repute, which she has quite maintained in the Midlands. She is a very neat, not large cow, nicely fed, fashionable in her appearance, and kindly in her touch, so that she looked to place herself readily enough as the best Shorthorn cow. Some, indeed, went further, and, as 'bred and fed' by Sir Walter Trevelyan, would have made her the best on this condition also, and so of course the best of all the Shorthorns, while this would have led on to her being not merely the best of all the females, but the best in the yard. Not but that some of her company kept her in countenance."

That anonymous authority, known as "one of the Judges," thus speaks of the best of all the cows in the Smithfield Club's own report: "She was a deep-framed short-legged cow, of almost perfect form, and fed as level as possible, her fault being that she was a little too low before."

The Princess of Yetholm, had only just "qualified" with one calf, a heifer called Queen of Yetholm by 2nd Earl of Oxford (23843), that has also gone on a visit to 3rd Duke of Wharfedale, at Wetherby.

PLATE II.

PERO GOMEZ.

THE PROPERTY OF SIR JOSEPH HAWLEY, BART.

Pero Gomez, bred by his present owner, Sir Joseph Hawley, in 1866, is by Beadsman out of Salamanca, by Student (son of Chatham), her dam Bravery, by Gameboy—Ennui, by Bay Middleton—Blue Devils, by Velocipede.

Beadsman, bred by Sir Joseph Hawley in 1855, is by Weatherbit, out of Mendicant by Touchstone. He won the Derby; but his career on the turf was not a very long one, and his stock came out in 1863, when he was credited with one winner in Mulberry, followed by Merry Wife in 1864, Caryophyllus in 1865, Arapelle, The Palmer, and Red Shoes in 1866, Belphegor, Blue Gown, Green Sleeve, and Rosierucian in 1867, and Pero Gomez, Morna, and Acorn in 1868. It is noticeable that nearly all these winners are the property of Sir Joseph Hawley, Beadsman having had very few mares, until latterly, beyond those of his owner. He stood last season at Hurstbourne Park at a subscription of 35 mares at 100 gs. each.

Salamanca, bred by Mr. W. Blake in 1859, came out in Sir Joseph Hawley's colours, but she was no great performer, nor, with the exception of Pero Gomez, has the mare been very successful at the stud. Her first foal in 1864 was Arapelle, by Beadsman; in 1865, Adosinda,

by Beadsman; in 1866, Pero Gomez, by Beadsman; in 1867, Salamis, by Asteroid; in 1868, a filly, by Fir-Roland; and in 1869, a colt, by Beadsman.

Pero Gomez is a rich brown horse, without white, standing fifteen hands three inches high. He has a plain head, with a not very nice expression, a good neck, and well-laid shoulders, although his forehead is by no means elegant or blood-like. He has good depth of girth, with strong muscular quarters, and a great big-jointed set of limbs. He has, however, a certain slackness of rib, and stands very upright before. Indeed, Pero Gomez is not a taking horse, as he shows a coarseness throughout, although at the same time something of a plain likeness to his sire, but standing nearer to the ground. He can scarcely even when winning the St. Leger be said to have fulfilled all his early promise; and with his legs at one time during the past season as round as soda-water bottles, his career seemed about closed at Ascot, although since, what with fine nursing, he has been quite set up again. Pero Gomez is still about the best of his year, as after being disappointed in the race, he ran Pretender to a head for the Derby, and over a longer distance of ground he beat Pretender far enough for the Leger.

SEWERAGE DIFFICULTIES.

BY CUTHBERT W. JOHNSON, F.R.S.

The improvement of the public health is a question becoming more and more interesting to my readers. Sanitary improvements are no longer viewed as matters of indifference. These facts are not now confined to those places where large masses of people are congregated. It has been shown that the health of even our rural villages is capable of great improvement, and perhaps on no occasion more clearly than in a recent valuable paper by Mr. Bailey Denton, to which I shall presently have occasion to refer (*Jour. Roy. Ag. Soc., N.S., vol. vi., p. 208*). As then it will be necessary to attend to the sanitary improvement of many at present neglected rural districts, it may be useful if we avail ourselves of a little practical experience, and endeavour to understand the task required of those who undertake to improve the health and comfort of a country town or village.

In taking a survey of the town, we shall commonly find that the houses are supplied with water from wells; that the house-drains lead to cesspools, which are constructed of porous materials, so as to allow the sewage to leak into the surrounding soil, and that very commonly the same stratum, from which the well derives its water.

The task which we have to fulfil is therefore evident; for omitting to notice other minor nuisances, we have to find, first, a copious supply of good water, and, second, to provide a drain for every house, and, third, arrange for the purification of the large amount of liquid manure received by the sewers.

These three great public objects must all be accomplished. It is idle to conclude that either of these may be neglected, and the others usefully rendered available. It is, however, satisfactory, and most encouraging to find that in ordinary cases the revenue derived from the water

rate and the disposal of the sewerage goes very far towards the payment of the interest and repayment of the money borrowed to carry out these great improvements. But to proceed with our object of clearing away difficulties, and avoiding erroneous conclusions, let us examine the best sources of obtaining a water supply, and next examine into what the sewage of a town really consists.

Before we do this, let us pause to consider for our encouragement the great saving of life that is in our power to accomplish, and on this point we may with advantage hear Mr. Denton, who remarks at the commencement of his paper on "Village Sanitary Economy":

"It is true that the annual reports of the Registrar-General maintain the views commonly held, that the degree of mortality amongst our rural population is much less than amongst that of our towns, for by comparing the death-rates of the 10 years ending 1866, it is found that the mean annual death-rate per 1,000 persons in the chief towns of the kingdom amounts to 24.59, while that of an equal population living in small towns, villages, and scattered dwellings in the country reaches only 20.10, showing a difference of 4.49 per 1,000 persons in favour of rural life. This comparison extended to 9,000,000 of people of each description. It appears by the same authority that over like periods, though of earlier dates, the average annual death-rate of 30 large town sub-districts was 28.01 per 1,000 persons, while that of 63 selected healthy country sub-districts was as low as 17.53 per 1,000 showing a maximum difference between large towns and rural districts of 10½ per 1,000 persons in favour of the latter. If we acknowledge this latter rate (17½ per 1,000 persons) to be a fair standard of healthfulness under favourable natural circumstances, without resting to show that it might be



The Duke of Devonshire
by J. G. G.
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further reduced by the aid of sanitary works, we have a means of testing the sanitary condition of all rural places, and may take it as a rule—subject, of course, to exceptions, in which local and special causes counteract human provisions—that those districts in which the rate of mortality is above $17\frac{1}{2}$ per 1,000 are susceptible of sanitary improvements, and a reduction of mortality. To satisfy those who are disposed to regard with sympathetic interest the condition of our rural poor, that the mean of $17\frac{1}{2}$ per 1,000 persons is not an extremely low death-rate, it will be presently shown that many rural districts have a much lower rate. In the Farnborough district in Surrey, for instance, the death-rate is as low as 16 per 1,000; Bromley, in Kent, 16; Cranbrook, 17; considerable parts of Sussex and Hants, 17; while Alresford, in the latter county, reaches only 16 per 1,000, and Easthampstead in Berkshire has the same rate. In Northumberland and Cumberland the rates of mortality are as low as those of the southern counties, the Bellingham sub-district being 14 per 1,000; Glendale and Rothbury, 15; and Bootle 16 per 1,000. To appreciate fully the natural advantages possessed by the rural over the urban population, and the agricultural over the manufacturing classes, in a sanitary point of view, it should be understood that the number of deaths varies very considerably in different towns, increasing in number as the towns partake of a manufacturing character, whereby the risk to life is increased. In London, for instance, where the proportion of the manufacturing class is comparative small, the annual mortality averages 24 per 1,000, while that of Manchester is 32 per 1,000; so that, compared with the average death-rate of the most healthy rural districts, the mortality of Manchester, our largest manufacturing town, is greater by $1\frac{1}{2}$ per 1,000 persons, and, compared with the average death-rate of the chief towns of the kingdom, is higher by $7\frac{1}{2}$ per 1,000 persons.

"Again, although our rural poor suffer much from the cold and wet of the two winter quarters ending December, and March respectively, the rate of mortality in towns indicates much greater suffering in the same periods of the year. In the three months ending December, the average death-rate in our chief towns is 24.78 per 1,000, and in the March quarter 27.88 per 1,000; while the average mortality of the country districts in the same periods was 19.15 and 23.26 respectively.

"But, satisfactory and encouraging to the rural classes as these comparisons may be, there is little to be said in favour of human providence to maintain the advantage, for it is a fact to be demonstrated by special local statistics that many of our villages are little better than nests of disease, showing even greater mortality than many of our large and crowded cities. The thatched roof, the low dormer window the cob walls—graced as they frequently are by the ivy, the rose, and the jasmine—the filthy ash-heap, the leaky cesspool, the excrement-sodden soil, the saturated subsoil, and the polluted well, are all conducive to fever, diarrhoea, diphtheria, and phthisis, and explain with irresistible force to the sanitary reformer, who has more regard to the statistics of the Registrar-General than the charms of the picturesque, why it is that in so many of our villages

"Childhood's cheek no longer glows,
And village maidens lose the rose."

"It is, indeed, impossible to over-estimate the evils incident to and tacitly permitted in villages, because they are small in size, and the constituent dwellings are low in value, when it is certain that if those evils existed in large towns they would be summarily dealt with as nuisances of the worst character."

The water-supply will first demand the attention of the sanitary improver. This, be it ever remembered, is the

foundation stone on which the other portions of his task rest. It is idle to construct sewers (which require to be regularly flushed), and attempt to introduce water-closets, without a copious supply of water. In seeking for that supply, the nature of the locality will influence its selection; if a pure spring can be obtained that will supply the town by its own gravity, of course that is the best; but failing this, then most commonly, if a supply from a public well can be obtained, it is to be preferred before that from a river, or from gathering grounds, the water obtained from which widely varies in purity in different seasons. The daily quantity of water needed for a town is very considerable, in some cases 25 gallons per head suffices, whilst in other places 50, and even 100 gallons per head are consumed or wasted. The cost of the water-works in small towns (*and the water-works should always belong to the public, and never to a public company*) is commonly small (two or three economical plans are given by Mr. Denton); that of large towns has been furnished by Mr. Baldwin Latham, the engineer to the Croydon Board of Health, in his valuable report on the permanent sanitary works of that town. He observes—

"The cost of water-works is generally compared by stating the full cost of the works, and dividing it by the number of million gallons of water supplied per day. The Croydon Water-works, when complete, will have cost £70,000, and will furnish a supply of 3,000,000 gallons per day; so that the cost per million gallons supplied daily will be £23.333. The following will show the cost of some other water-works in comparison with Croydon:

Place.	Cost per million gallons supplied daily.
Croydon	£23.333
Glasgow	59.280
Manchester	60,000
Liverpool.....	115.115
New River	100,000
West Middlesex	77,000

At Croydon, the town is supplied from two wells, sunk in the chalk formation, and these yield a daily supply of more than 3,000,000 gallons of water. This is raised by three Cornish engines into a covered reservoir, which is constructed on a rising ground 142 feet above the town, from whence (aided for the supply of some elevated portions of the parish by a water-tower) the water is supplied to the consumers by its gravity. The composition per gallon of this water will be seen by the following recent analysis by Dr. Odling of that obtained from two wells.

	Old Well. Grains.	New Well. Grains.
Total solid matter	21.609	21.946
Mineral matter	21.364	21.455
Volatile matter .....	.245	.490
Lime	9.635	9.765
Magnesia .....	.195	.187
Potash .....	.250	
Soda	1.168	
Silica	1.064	.959
Suphuric Acid .....	.658	.606
Chlorine .....	.988	.777
Carbonic Acid.....	7.890	7.865
Ammonia .....	.028	.035
Nitrogen as Ammonia .....	.023	.029
" Oxides.....	.206	.280
" Organic matter ...	.004	
Hardness before boiling	15.2°	15.2°
" after boiling.....	8.0	3.4°
Specific gravity	1.00031	1.00031

The house drainage is the second great branch of our inquiry, and here our great difficulties commence. It is far too commonly believed that in the drainage of a town it is the produce of the water-closets that is to be chiefly regarded. From this erroneous conclusion all kinds of schemes have been propounded—patents taken out, and strong arguments adduced; deodorizers of several kinds; mechanical contrivances for working pumps; carrying away the sewage in carts, either in its liquid state or mixed with earth; evaporating the mixed earth and excreta to dryness, then using it again; drying the mixture over and over again, then carting it away; receiving the sewage into settling, or what may be well described as stink-producing tanks, and allowing the clearer portion to escape into the adjoining streams, either before or after it has had precipitants added, such as lime or certain salts. These plans, as they have all proved, or will in all reasonable certainty prove to be failures when attempted on a considerable scale, have mainly originated from their concoctors not remembering that for the sewage of a town we have to provide for not only the water-closets, but (1) the sinks, (2) the wash-houses, (3) the rainfall on the roofs of the houses, (4) the rainfall in the streets, and (5) the waste water of certain manufactories.

Now, sewers must be provided for all these; and the nature of four of these is so impure that, without previous purification, they are not admissible into a river. The water of a road even, if that road is paved or formed with broken granite, contains far too large an amount of impurity to be allowed to drain into a stream. Professor Way some time since analyzed the surface-water obtained from the granite-paved and macadamized portions of Oxford-street, in London (*Jour. Roy. Ag. Soc.*, Vol. 15, p. 149). He found in an imperial gallon of that:—

	Soluble Matters. Grains.*	Insoluble. Grains.	Total. Grains.
From the paved.....	276.23	537.10	813.33
From the macadamized...	194.62	390.30	584.92

The soluble matters of these consisted of:—

	Paved.	Macadamized.
Water of combination, and some soluble organic matter.....	77.56	29.07
Silica	0.51	2.81
Carbonic acid	15.84	12.23
Sulphuric acid	36.49	38.23
Lime	6.65	13.38
Magnesia	—	23.51
Oxide of iron and alumina, with a little phosphate of lime.....	9.58	1.25
Chloride of potassium	—	10.99
Common salt	53.84	44.88
Potash	82.76	18.27
	276.23	194.62

It will be seen, added the Professor, that the soluble matters of these samples of street water consist of salts of potash, magnesia, lime, and soda. The sulphuric acid (in the states of sulphates of lime, potash, &c.) owes its origin most probably to the large quantities of sulphur daily thrown into the air from the coal burnt in the metropolis. This sulphur, in whatever form it might originally exist in the air, would rapidly be oxidized, and brought down by rain. The large quantities of potash in these waters—amounting in one instance to 80 grains in the gallon—are due to the disintegration of the granite by the united action of mechanical friction and the sulphureous and the carbonic acid of the London air. In country towns, where the number of the inhabitants and the amount of traffic in the streets are in relation to the area occupied much smaller than in London, it may be a question whether the admission of the rainfall and the

land-drainage waters into the sewers is advisable or not. But so far as London is concerned, and considering only the composition of the liquid which reaches the sewers in the time of rain from the streets, it seems pretty certain that it would be as valuable in a manuring point of view as the ordinary contents of the sewers. There would seem therefore no reason to exclude such waters on the ground of the dilution and deterioration of the sewage, to which they might be supposed to lead.

The third important object is the purification of the sewage before it is allowed to escape into the adjoining stream. Now, on this great question, her Majesty's Commissioners, appointed to inquire into the pollution of rivers, have recently made a report, in which they arrive at the conclusion that by no known contrivance can that purification be accomplished nearly so well as by the irrigation of grass land. It is the vegetable world only that can profitably extract from sewage its soluble, and that its most fertilizing portion. And how well the grasses thus purify the sewage of Croydon may be seen by the result of some examinations by Dr. Odling of the thus purified drainage matters of the town. In this case the samples analysed were taken every quarter of an hour by the Doctor's assistants on the 23rd and 24th of November, 1867. The account I take from the report of Mr. B. Latham, to which I have already referred, who observes:

"The sewage at the time was flowing over 30 acres of land, on which it had been continuously flowing for about two days; the volume of sewage passed on to the area in the twenty-four hours was 3,274,300 gallons, and the effluent water, flowing off after purification, was 2,245,300; so that 81½ per cent. of the whole volume was lost by evaporation and absorption. As the land was completely saturated prior to the experiments, it may fairly be taken that 15.75 per cent., or one-half the entire loss, is due to evaporation through the plant and from the water surface. This would tend to condense any impurities that remain in the effluent water in the proportion of the reduction of volume. In the analysis given, the result that would be obtained by condensing the water supply, is shown in the second column:

	Sewage of Croydon after purification by irrigation Nov. 24th, 1867. Grains per Gallon.	Water supply of Croydon, condensed to same extent as sewage. Grains per Gallon.
Total solid residue	26.180	25.233
Mineral matter	25.025	24.807
Volatile matter	1.155	.426
Chloride of sodium	3.400	1.684
Ammonia .....	.043	.037
Nitrogen as ammonia .....	.032	.030
Nitrogen as oxides .....	.419	.251
Nitrogen as organic matter...	.144	.023

"A comparison between the two columns will show how nearly the sewage has returned to the state of the pure water as supplied to the town. It may be observed, that the total amount of organic and volatile matter contained in the effluent water after passing over the land, is less than the average amount contained in the water supplied by any one of the existing London water companies; and, therefore, it may safely be laid down that sewage after such purification is fit to be turned into any fresh water course. It may be remarked, that the analysis of the sewage was made at a period of the year very unfavourable to the system. We must all have seen that, as the process of applying sewage to land has become successful in effecting the purification, doubts have arisen

as to the probable effect of spreading large volumes of it over areas in the immediate vicinity of populous places. The result of the application of sewage to land, in a sanitary point of view, is equally assuring; for we find, upon examination, that Norwood, with its irrigation area close to the inhabited district, during the three years the system has been applied to the land, has had a mortality of 18.17 per thousand in 1865, 15.13 in 1866, and 14.21 in 1867; while the same area, but inclusive of more distant localities, has had, during the same period, the respective mortalities of 21.26, 20.04, and 16.60; so it appears that, in the rapid growth of the plant, the assimilation of nitrogenous and carbonaceous matter, and the elimination of large volumes of oxygen by the plant, we have the antidote for what might have been thought to prove baneful in its effects."

One great, yet common public delusion as to the superior value of the insoluble or mechanically suspended matter of sewage, has led to many expensive failures. Its value is far inferior to the chemically combined or soluble portion. At Croydon, we can only with difficulty dispose of these matters, though we offer them at only two shillings a ton—that of the Leicester sewage works is offered at one shilling per ton—the dried night-soil of Rochdale only commands the same price. If we contrast these prices with the value of the grass annually produced on the sewage irrigated fields of Beddington and Norwood (30 to 32 tons per acre), we hardly need a chemical analysis to show which is the most valuable portion of town sewage.

It will be instructive if we inquire as to the value of the night-soil when it is collected under favourable circumstances, such as in large towns by well organised collectors.

In a recently published report of the commissioners appointed to inquire into the pollution of rivers they have given the following table. This contains the returns from certain large towns, and includes, 1, the population, deducting the estimated number using water-closets; 2, the tons of manure removed from privies, more than three-fourths of which must be ash and cinder waste; 3, the value annually received for it at the dépôt

from the cultivator; and, 4, the amount thus annually received per head of the population (*Agricultural Gazette*).

Town.	Population Using Privies.	Tons of Manure Annually.	Money Received.	Value per Head.	
			£.	s.	d.
Liverpool...	350,000	138,777	8,000	5	5
Wednes ...	12,000	1,800	150	8	0
Salford ...	120,000	38,600	4,000	8	0
Manchester	300,000	73,594	6,740	5	4
Bolton.....	75,000	22,465	1,587	5	0
Bury	29,000	7,000	100	0	8
Oldham ...	77,000	50,000	2,000	6	2
Ashton ...	37,000	6,637	95	3	2
Southport..	15,000	9,000	740	8	8
	1,015,000	347,573	23,392	5	5

Upon these facts the Commissioners remark: "The sum of £23,392, which is here quoted as representing the money-value of all the house waste of about 1,000,000 people, is indeed all that is received from 1,236,000, that number being the whole population of the towns named, and that sum being all that is received for what the scavenger collects, so that the annual value individually of man as farm stock in Lancashire may be put down as less than 4d., and this supposes the ash and cinder waste with which the excrement is mixed to have no share in the valuation."

The fair conclusion, then, to which we must arrive, I take it, is this—that all attempts to collect night-soil, by manual labour, except on a small scale, will only end in failure. The city of Paris has, after a lengthened, well-conducted, trial, abandoned the disagreeable system. When, indeed, we reflect that, if we adopt the water-closet system, and provide a town with a good supply of water, we moreover have to provide sewers for the various impure waters to which I have alluded, then we must be led to conclude with her Majesty River Commissioners, that no system hitherto suggested for the utilization of the collected sewage approaches in usefulness the irrigation of grass.

JUDGES AND JUDGING.

It has been a very pleasing duty of late to speak to the marked improvement in the conduct of the *Journal* of the Royal Agricultural Society of England. The numbers now come well timed to the period at which they are issued, and, in place of a series of heavy papers of no particular point, there are many subjects of passing interest to command attention. Dr. Voelcker and the Editor go to Belgium; M. Le Cornu writes well on the Potato in Jersey. The systems of cheese producing in Cheshire and America are put in comparison one with the other; while we hear of steam cultivation from the North, and of straw-chaff from the East. We are told how reclaimed land should be cultivated, and sanitary economy in villages enforced. These, and similar topics, come fitted to the hour, and, as Mr. Jenkins has already proved that he can do something more than merely revise or compile, the Society may be honestly congratulated on an appointment that in the outset was condemned even before it was ratified.

Nevertheless, it is sufficiently evident that this *Journal* can never be anything more than a matter of secondary consideration. The fortunes of the Royal Agricultural

Society must still mainly depend, as they have from the first depended, on the success of the great summer show. Regarded on the whole, the result here has been something more than satisfactory. The meetings have continued, almost year by year, to increase in attraction and importance. In fact, at this moment the question is only one of good management. If the direction do its duty, the exhibitors and the public will give their support. Not, however, but that these gatherings have been occasionally in danger. The leading implement-makers, for instance, rebelled, as the Council at one time threatened to give way and adopt a course that so far as any effective entry of machinery could be concerned would have been simply suicidal. Another attack is now being made from another quarter. It would seem that the judges of stock do not possess sufficient knowledge of that they are about, and the Council will accordingly endeavour to have these gentlemen better informed. At the next monthly meeting in Hanover Square, on Wednesday, April 6th, Mr. William Torr will move that "the judges of live stock be provided with catalogues in the same manner as judges of implements now are." Should this resolution be ac-

cepted, we believe that it will be attended with the most damaging consequences, as we cannot, so far, see one sufficient reason for its adoption. The judges themselves would in their actions be laid more and more open to suspicion and adverse criticism, while the standard would promise to be lowered rather than raised. Many an incompetent man who now very prudently declines to accept the appointment would hardly hesitate to do so on the understanding that he should be provided with full particulars. He would almost inevitably go for name rather than form, and if only *quite* sure that he had put Booth first and Towneley second, he would have no further fear, however little such an award might be otherwise justified. Moreover, any such alteration as that proposed would be grossly unfair to younger or less known exhibitors. Let us imagine that, if only out of compliment to the founder of the tribe, Captain Gunter were induced to send one of his Bates' heifers to the coming show at Oxford; her attendant would be probably unknown, and without the catalogue she would take her chance on her actual merits with the remainder of the class. Whereas, with the catalogue in his hand a judge would, of course, at once rest his eye on her, and that first sight has a deal to do with it. It may be argued that judges of much practice will soon come to recognize particular animals as they do the servants. The men like "Cuddy" or long Ward they can, of course, identify; but they are not always so certain about the stock, and there are no few cases on record where judges of character have awarded the prize to one beast under the impression that it was another. If possible, we should of course prefer to have these cowmen, shepherds, and grooms excluded while the awards were being made, but this with bulls and stallions would not be practicable, although otherwise there would seem to be no reason why the men should not be "barred out," as they are at the fat cattle shows. A short-wool breeder can scarcely help greeting the old shepherd from Babraham, and at the last Newcastle Royal meeting the joke of the week was that the worst heifer from Scotland took the first prize because the Warlaby herdman led her into the ring. A really good, straightforward judge would say, "the less I *know* about any of the animals the better I like it;" while a weak, a bad, or a "trimming" judge can hardly know too much. At the meeting of the Dorchester Farmers' Club last week, Mr. Spooner, of Eling, who has repeatedly acted as a judge at the meetings of the Royal Society, said he "must refer to a proposed alteration in the judging at the Royal Agricultural Society's shows. It was proposed, he said, that the judges should be furnished with catalogues showing the pedigree of the animals and the names of the various owners. Now he thought nothing could be so detrimental as that; he should be very sorry to act under any such conditions. At the Chelmsford meeting he overheard a conversation as to what a terrible thing the judges had done—they had absolutely given the first prize to Prince Albert's horse; every one would say they had awarded him the prize because he was the Prince. But the judges had not the slightest idea as to whether the animal belonged to a prince or a peasant." There is another story, touching on the Prince Consort's entries, which the late Mr. Fisher Hobbs was wont to tell with great glee. At one of the Smithfield Club shows a judge, who was known to have something of a weakness for great people, held out very determinedly for a certain bullock, the impression with the stewards being that he thought this had come from one of the Windsor farms. His fellows eventually gave way, and then, alas! it was discovered that the beast put first enjoyed no such Royal recommendation, although one of the discarded did. With catalogues in their hands, the judges at Chelmsford

would most assuredly have been unfairly treated, as very probably on the same conditions the beasts would have been at the Smithfield Club.

At a recent meeting of the Council of the Royal Agricultural Society it was determined, at the instance of a judge, who is also a member of the Council, to pay the expenses of members of Council who act as judges at the Society's meetings. Let the members of Council be next duly furnished with catalogues, and let them then appoint each other as fast as they can, and make sure of their expenses accordingly. Nothing could be nicer, and nothing but the coupling and carrying of these two companion resolutions would promise to so thoroughly damage the character of the Royal shows. At a committee meeting of the Suffolk Agricultural Association, on Wednesday last, Major Wilson said they had received a request from the Royal Agricultural Society to recommend gentlemen as judges; and Mr. Manfred Biddell said, "they had had that request for many years, but he never knew one chosen from those gentlemen recommended." Precisely so; and if things go on as they have been going a man to stand any chance of being made a judge should first of all be made a member of Council. "And what shall I mak' you?" said the Prime Minister not very well pleased, and in a strong Northern accent, to a place-seeker, who had saved the life of one of our Georges. "What shall I mak' you, mon?" "Well," answered the other, coolly, "I think in the first place you had better make me a Scotchman."

At the great Horse and Hound show at Middlesbrough, at which we were present, Mr. Parrington placed the catalogue complete in the hands of his judges, but *he has never done so since*; and Mr. Parrington's arrangements are infinitely superior to those of the national Society. He will not even suffer a fussy steward to show himself off in the ring, but these officials are placed at the entrance to pass in the classes. Whereas at the Islington Horse show any great man or any very particular friend of any body else is bowed in, and the judges go to work duly armed with the catalogue. And nowhere, as a rule, is the judging so false or so bad as at Islington. At the last exhibition there was scarcely a first prize properly awarded. The best weight carrier, the best of the other hunters, the best thorough-bred stallion were none of them the best, as the decisions in their favour were continually corrected during the summer, and some of these during the very next week. Of late the Council has been tampering with the Royal show. Putting its head in the mouth of a local committee was a mistake, making a precedent of the payment of Messrs. Sanday and Bowley's expenses was a mistake, but a far graver error will be furnishing judges with the stock catalogue. The actual responsibility of a judge, who is really worthy of his office, cannot be too great, but we go far to destroy such authority in its entirety by a list of names and particulars, the interference of stewards, and the loquacity of Veterinarians.

A CENTRAL VETERINARY MEDICAL SOCIETY.—We have in the agricultural world the very type of an actively useful central society, having no political bias, but practically wielding an immense influence in the affairs of the farming community. Farmers' Clubs are even more plentiful than Veterinary Medical Associations, but they are all represented in a great measure by the Central Farmers' Club, which, in its place, is the kind of Society we desire to see established in the veterinary profession. The first step in the development of this scheme is to obtain a competent and energetic Secretary, who at the beginning must work "for fame, not fortune." The Society once fairly established should, however, be prepared to remunerate their Secretary, as this is just the kind of work which demands fair payment.—*The Veterinarian.*

OUR IMPORTS AND EXPORTS.

The publication of the revised Board of Trade returns for 1869 enables us to take a comparative retrospect of the fluctuations in our foreign food supplies, and the sources from whence they are drawn, in the last year or two. This is a subject which requires some consideration from the farmer, who is equally, if not more, interested in it than the merchant or importer. Although our agriculturists have not been idle of late years, but are developing to the full the resources of the soil, we are yet dependent, and are likely to continue so, on foreign countries to meet many urgent food wants. We do not speak, of course, of tropical and other special productions, for which our climate is totally unfitted, although these are articles of necessity we cannot do without, but of cereals, and dairy produce, and animal food in general.

First, let us take our grain supplies from abroad: Of wheat we received in 1869 37,695,000 cwts., or 5,000,000 more than in the previous year, and 3,000,000 more than in 1867. But the sources of supply are somewhat changed, as we draw more largely from Transatlantic countries, and less from Egypt, the Turkish provinces, and Europe generally. The foreign imports of barley, oats, and pulse have not varied very materially in the past three years. Barley alone shows an increase as compared with the entries in 1867. There is a remarkable increase in the imports of maize, which amounted to 17,500 cwt., or double the quantity received in 1867. This, probably, is chiefly used for feeding stock, as the consumption in meal, or Indian corn flour, cannot have led to this great advance. Rice shows also a large and steady increase, amounting to 5,327,000 cwt. in 1869, or double the imports in 1867. This may be partly accounted for by the larger use now made of this grain for laundry starch and other manufacturing purposes, owing to its abundance and cheapness as compared with wheat. The continental manufacturers of starch, in France, Belgium, Holland, &c., are now beginning to follow the example set them in this respect by British starch makers. Our foreign supplies of wheat flour last year reached 5,403,000 cwts., or nearly 2,000,000 more than in 1867. France and the United States sent us the chief supplies, and Canada is also able to furnish largely. The imports of Indian corn meal keep comparatively steady, the changes in the figures of the last three years being but slight. The quantity of foreign hops received last year from the continent was larger than usual, being 322,500 cwts. against 231,700 in 1868. The exports of beer and ale to foreign countries were, however, not larger—indeed, they were about 23,000 barrels below 1867; so that the home demand must have been greater for ale and stout. A curious item in our foreign indebtedness is dried yeast, amounting last year to nearly 121,000 cwts. from Holland.

Turning to dietetic articles, we still pay about £100,000 a-year in duty alone for foreign-grown chicory, although our home supplies are about 14,000 cwts., so that the taste for this adulterant does not diminish. There is little variation in the consumption of coffee, although it is rather on the decline than otherwise, at the rate of about a million pounds a-year. Cocoa, on the contrary, which has hitherto not been largely used, seems to be increasing at the same rate—namely, a million pounds a-year. There was a large decline in the quantity of tea used last year, about 15 million pounds. Is this to be accounted for by the rubbish which has recently been shot on the market, of which we have heard so much in the public prints lately? consisting of warehouse sweepings and re-dried leaves sold to the poor. The quantity

of foreign raw sugar used in the last three years has been remarkably stationary, scarcely varying at all from 11,200,000 cwts. per annum; in refined there was, however, an increased consumption last year of 227,000 cwts. A new item in the returns is the home-grown sugar made from beetroot, a manufacture commenced here in the close of 1867, and which last year amounted to 29,284 cwts. Dried fruits still keep steady at 1,156,000 cwts., and a miscellaneous lot of spices, gradually increasing, make up the total of our foreign vegetable supplies. There remains one large item which chemists class as food, but which enthusiastic opponents tell us is poison, and that is tobacco, of which we used 41,720,000 lbs. last year, being a gradual annual increase of about a quarter of a million pounds a-year. This article, coupled with wine and spirits, tea and sugar, coffee and cocoa, bring into the revenue about 23 millions sterling.

Having dealt with the substances derived from the vegetable kingdom, let us now glance at the foreign animals and animal products we purchase. In the live stock imported from abroad there has been a steady increase in the past three years in sheep and horned stock. In dairy produce butter shows a steady increase, and reached 1,259,000 cwt. last year; but how much of this is tallow-manufactured Dutch butter the returns do not specify—our readers must guess for themselves. Foreign cheese is also on the increase, reaching now nearly 1,000,000 cwts. Eggs also show the enormous demand prevalent here, the only surprise is where the poultry are found which supply us annually with 442 millions of eggs. Our demands for American lard keep steady at about 250,000 cwts. Salted meats are in demand, principally, we suppose, for the royal and merchant navy and emigrant ships, as our imports last year were 1,157,000 cwts. A novel item in the returns is "meat not otherwise described," to the extent of 90,000 or 100,000 cwts. This, we presume, must be the tinned and other Australian meats, for which a market has lately been created, and public monthly sales commenced in London.

If we take the other side, and see what agricultural food we send away of home production, we find the figures are by no means contemptible, and evidence a busy industry on our farms, and a steady foreign demand. We sent away last year about 100,000 cwts. of home-cured bacon and hams, and 20,000 cwts. of beef and pork. This is somewhat below the usual average. The butter exports keep steady at 270,000 cwts., and British cheese is shipped to about 110,000 cwts. We only sent away to foreign parts 2,217 British horses last year, against 4,100 in each of the previous years. Pickles and sauce making must be a prosperous business, when the declared value of those articles exported last year is returned at £406,451.

There is a little item of strong drinks and beverages, home and foreign made, which enters into the consideration of our food supplies, and forms no inconsiderable figure in the returns before us. We used up 47,705,000 bushels of malt for beer last year, of which about 1,290,000 bushels are estimated to have been used in the beer exported. We consumed in the United Kingdom last year 21,621,590 gallons of home-made spirits, besides more than 8,000,000 gallons of foreign spirits; and we also added to this about 15 million gallons of strong wines.

There are many items of small articles of foreign produce which are not of sufficient importance to enter into the monthly Board of Trade Returns, such as potatoes, fruit, dead meat, and poultry, &c., which only come into notice in the more elaborate blue book forming the annual abstract of the trade and commerce of the United Kingdom.

CROPPING.

At the last quarterly meeting of the Carmarthenshire Farmers' Club, Mr. MORGAN, of Llwyn, read the following paper:—

The subject which I have chosen for this day's discussion is "Cropping," a subject upon which great varieties of opinion are entertained by the theorist, and one of vast importance to the practical farmer, for it is upon the skill and energy which he displays therein that the quantity and quality of his produce will depend, and its good effect be seen in stock, flock, or stud. I, however, propose limiting my remarks to the growth and respective values of cereal and green crops, which are generally grown in this country: I shall also adopt as the basis of my remarks the four course system, which is in my opinion (for at least a certain number of years) the most economical and efficient system of cropping. I say "for a certain number of years," for my own experience has satisfied me that after about twelve years' cultivation under that system, it will be necessary to give such land rest, by laying it down in grass. And this is what we would naturally expect, for by no other means—not even by a thorough knowledge of chemistry—can we hope to restore to the exhausted earth those qualities which have been continually drawn from her by constant cropping. Now, I will suppose myself entering upon a farm (which has already been treated on the four course system) at Michaelmas, and will consider what I had best grow in the "clover ley." I have no hesitation in saying, that if I purpose growing wheat at all, I would plough it up and set the old red Lamas wheat in it—taking care that it should be in the middle of October—as I am pretty sure that, taking the average of seasons for the last fifteen years, moderately early sown crops have been by far the best. If the clover crop had been a good average, and had been grazed on the land, perhaps the field would require no autumn dressing with manure; but if in the spring you find your crop does not look as thick and luxuriant as you could wish, I should strongly recommend a top-dressing of nitrate of soda. It has been tried with excellent results by some of the best farmers in our neighbourhood—amongst others, by Mr. Gwynne Vaughan, of Cynghordy, and Mr. Davies, of Glanrynia. I think the best time for the top-dressing is about the middle of March, which having been attended to, I think we must then let it take its chance, with the exception of a rolling or two and a run through it, to take care of any of Mr. Brodie's friends that may show themselves—I mean weeds. I must here remark that in nine cases out of ten the wheat is permitted to become sadly over ripe before it is reaped. The effect is seen not only in the shrivelled, crimped appearance of the grain, and in the scant yield of flour, but common sense and scientific testimony point to an enormous deterioration in the value of the straw. Now, gentlemen, I have intimated a doubt as to the wisdom of growing wheat at all in this neighbourhood, but especially in the upper part of the county. Having fairly given the matter my best consideration, I have arrived at the conclusion that an oat crop in clover ley is the more remunerative of the two. Thus I take the average amount of wheat grown per acre upon land of 20s. rental to be 25 bushels, which at 6s. 5½d. per bushel—the average for the last seven years—will make 28 0s. 11½d. per acre. Now let us see what oats, set on the same land and under similar circumstances, will make. We can safely calculate upon a yield of 50 bushels per acre, which, taking the seven years' average at 2s. 11d., will make 27 5s. 10d. per acre. But in favour of the oat crop you have four whole months' grazing of the land, which cannot be put at less than 5s. per acre; then the difference in the cost of seed will amount to 7s. 3½d., leaving an apparent balance in favour of the wheat crop of 2s. 5½d. per acre. If these figures are correct, I would ask you, which would you prefer, a field of wheat or a field of oats, when you take into consideration the extra risk which attends the harvest of wheat? We have not hitherto spoken of the relative value to the farmer of wheat and oat straw. And here I shall most likely run counter to the opinions of many, if not all the gentlemen present, for I am going to claim a decided superiority for the oat straw. I was born and bred in the possession

of quite a different idea; nor should I have been convinced now were it not for the observations and arguments of a very intelligent neighbour of mine (Mr. Davies of Penlan), backed up as he was by an analysis made by Professor Voelcker (one of the best chemists of the day). Oat straw heads the list for all flesh and fat-forming properties. Barley straw comes next, and wheat straw, which is the highest priced in the market, is the least valuable of all. Such being the result, I think I am justified in submitting it to you for discussion. I should add that in my opinion the weight of straw per acre would be in favour of the oats, while no one can doubt which is the more hardy and most to be relied on, taking the average of soils. We must now proceed to treat the land preparatory to the next crop, and I shall practically confine myself to the swedes and mangolds as being the most valuable roots grown for the maintenance of stock. As soon then as the pigs, poultry, &c., have picked up what ears and corn may have remained after hauling, I send in the scarifier with the broad spuds (or tines) on, and scarify it thoroughly two or two-and-a-half inches deep, and, if necessary, to secure a thorough paring, I would recommend a cross-scarifying—then harrow it with a light harrow, say once a week till the middle of October—by that time the grass, roots, weeds, and stubble, will have been reduced into a compost of considerable manurial value. I then spread over it what I consider to be a half-coating of farm-yard manure, plough it in as soon as possible, not deeper than about four inches. I then shut up the field, leaving it to the mercy of wind, rain, frost, and snow, until the beginning of April, when you will find it reduced to a powder. This time plough as deep as you can—harrow it well—then send the cultivator through it—repeat the harrowing, and unless the land is very stubborn, you will find it fit and ready to be cobbled into ridges. Previous, however, to the ridging process, we must remember that it has had only half the allowance of manure; I therefore, to act honestly by the land (for there is nothing that will carry tales sooner), purpose giving the other half now in the shape of artificial manure. I have found two cwt. of superphosphate, and one cwt. of guano per acre, sufficient to produce an excellent crop of mangolds and swedes. Mangolds should always be set before the end of April. I only set as much as is necessary to keep my cattle on from the time that the swedes are done, i.e., about the latter end of March, until they are turned out to grass. I have found them of very great use for young calves; which I have sometimes housed during the summer months, but there can be no doubt that, in such cases, vetches or cut clover are as good and more economical than mangolds and hay. I have frequently kept them in good order till July, and on one occasion I had some quite healthy in the early part of August. Still, I only grow them sparingly as I have not grown anything like such a weight per acre of mangolds as of swedes. I should like swedes to be set during the first fortnight in May. I, last year, set a considerable portion in the last week in April, and a better crop I have never seen. In favour of early setting there is the obvious advantage that then the land is more moist and better calculated to make the seed vegetate than under the broiling sun of June, when the land, after repeated ploughings and harrowings, is as dry as a bone, and so long as the drought lasts the seed might as well, or perhaps better, have been in the seedman's warehouse. I am well aware that some object to such early sowing of swedes, on the ground of their being the more liable to mildew. I can only say that I have not found that to be the case, and have sometimes suspected that the objection has been made merely to cover the farmer's remissness in not setting his crop in good time. I like the ridges raised about twenty-seven inches apart, for then you will be able freely to send between them the horse-hoe, that most important implement in the successful cultivation of green crops. Whatever sins, gentlemen, are pardonable in the farmer (and I confess there are a select few to which I plead guilty), I can admit no excuse for the man, who having incurred very great labour and expense in setting a field of turnips, permits the plants to

be choked and the land overrun by foul and poisonous weeds. A light roller sent over the ridges prepares the way for the drill, which should have its coulter so as to form a groove for the seed to fall into. There should be no rolling after the seed is put in; for unless the land is perfectly dry it compresses the earth, which, when dried, becomes a hard crust, through which it is useless to expect the young plant to force its way. If we have a plentiful supply of plants I would, as soon as they have got into the rough leaf, send the hand hoes through them, striking off the unnecessary plants, and only leaving small bunches of four or six at the distances at which you intend growing your permanent crop, and until the plant that is to remain can well dispense with the other's company, which will be when it is about two inches above the ground. I like to see swedes thinned about ten inches apart, much preferring two moderate sized to one very large turnip. They are generally firmer and keep better. I store my swedes about the end of November, being satisfied that if sown at the time I suggested, they will have reached their full maturity. I have them topped and tailed in the field, charging the men not to cut the leaves too close, for by so doing a considerable quantity of winter food is lost, and the tubers have not so good a chance of standing the frost. I then tilt them about three or four feet high by as many feet wide, against the high bank of a hedge, running nearly north and south, which, with the assistance of a good covering of refuse of straw, the plasterings of hedges, and such stuff, effectually protects them from frost. I have adopted this simple plan for years, and have found them keep perfectly sound and healthy to the end of March. Mangolds require much greater care. I store mine in a house built for the purpose, placing between the mangolds, at thicknesses of about two feet, layers of small branches, which act as ventilators, and prevent fermentation setting in. I should remark that mangolds require to be thinned at greater distances than swedes. I should say about fourteen inches, and when drawn the tops should on no account be cut close; for once the crown is cut, the keeping properties of the mangolds are materially injured. Now, gentlemen, for our last white crop, I would, as a rule, recommend my favourite—oats: because it is more hardy and better adapted to the generality of soils than wheat or barley. Still, if you have a field suitable for the growth of barley, it is a crop with which the farmer can hardly dispense. Its feeding properties, and its superiority over even oats in many respects, are too well known to require enumerating. But it is only when that oppressive and unjust impost, "The Malt Tax," shall have been repealed that the full value of barley to the farmer will be realized. Successive governments have turned a deaf ear to the demand of this measure of justice, chiefly because they know the agricultural interest to be a loyal and much enduring class. But there is a limit of endurance, and to secure the repeal of this tax, I think the exertions of every member of agriculture and of every farmer's club should be directed. Well, gentlemen, it only remains for me to advise you to sow, with the barley or oats, the very best clover grass seeds you can get, although, after the important disclosures made by Mr. Brodie as to the enormous adulteration of seeds at our last meeting, the warning may hardly be necessary. And now I have done. I must, however, thank you for the very kind attention which you have given to what I have so imperfectly said, and I trust that no member present will refuse to give us the benefit of his opinion upon the subject before us, for I maintain that full and free discussion is the very soul of societies such as this.

Mr. JONES (Penycroft) said: It would be just to say that the consideration of the system of cropping would be putting the cart before the horse, unless they considered how to put the land in proper order for sowing seed. Any farmer before he adopted a system of sowing or cropping would first ascertain the qualities of the land he was about to plough. Personally, he was not an advocate for ploughing old land before it had been manured. Farm-yard manure, if it could be got, was very good. Lime and earth he often thought good. As to the four course system he had tried it many years ago, and followed that system for seven years. During the first round he found it answer very well, but when he came to the second round he found the land was too light to bear a heavy crop. That crop was generally wheat. When the land had been one year in grass he put in wheat which looked very well indeed until it came to the ear; but when the wheat crop came to the

ear he found the stem was withering at the root, and the land was too light to hold it. In fact the land would not hold it. It was then he discovered that the four course system would not do. He would tell them what he had been doing since. He afterwards followed the six course system. First, he had two years in grass, then he put in wheat, then he limed it as well as he could after the turnips, and then had a crop of barley or oats according to the nature of the soil. Then he had turnips, and then barley or oats again according to the seed, then two years in grass. He had found that system to answer well, and he was still carrying it on. He believed Mr. Morgan's land was somewhat similar to his own. It might be that Mr. Morgan found a four course system to answer very well. But whatever system any farmer should adopt he would advise him to lay down his land in good heart, to clear all the weeds, and then there would be no bar to an abundance of grass, and also there would be plenty of room for any other roots as desired.

Mr. BRODIE (Tyrdail) said he had expected Mr. Morgan would have launched out a little more; however, he was much obliged to him for his information as to what he was doing up above. It appeared to him that there was no general rule that could be laid down for cropping. The climate, the quality of the soil, and other things varied so much that a general rule was rendered impossible. For example, look at the rain-fall in South Wales. There was one thing which appeared to him certain, viz., that no two crops of any sort should succeed each other. He did not think that was properly acted up to in Wales, and the day seemed to have gone by far having any stringent conditions in leases. He fancied now that if a farmer had got anything in his head, or anything in his pocket, he should never suffer himself to be bound too tightly by a lease. He should go with the times and his own inclination. Of the four course system he did not approve. He never adopted it himself except upon one small farm, and that had a clay soil. It went on well for a time, but it told upon the land eventually. The land required after some of the crops a good deal of getting up again, as it was exhausted. Mr. Morgan had spoken very much in favour of nitrate of soda. He could not himself say that he had found it very satisfactory. It might do for a hay crop, but nothing else. It was like a man who wanted to get a good bit of work out of himself and so took a few glasses of beer; but on the next morning he would be found very seedy. If they would only notice the land after nitrate of soda had been used, they would find it was not a very profitable thing for the farmer. He might be wrong on the point, but anyhow such was his experience. He did not exactly comprehend what Mr. Morgan meant in his reference to the malt tax. He did not think that the malt tax had anything to do with cropping.

Mr. MORGAN: It has to do with barley.

Mr. BRODIE agreed that if the duty were taken off a corresponding favour would undoubtedly follow in favour of the foreigner. He did not see what the country could gain by beer being reduced in price.

Mr. LEWIS (Llwynedwen) said that he thought it would have been more practical if Mr. Morgan had attempted to show what system of cropping was best for Carmarthenshire. But on the contrary, Mr. Morgan had never alluded to any system of cropping; he had been talking only of the rotation of cropping. He must say that he himself perfectly agreed with many of the remarks which Mr. Morgan had made, but there were others from which he dissented. His own opinion was, whether right or wrong, that when land was worth 25s. per acre, it would not answer for any rotation of cropping. It would be better then to keep it in permanent grass. Besides there was very little land in Carmarthenshire that would produce wheat to the extent Mr. Morgan had mentioned, viz., five and twenty bushels per acre. On the average he did not think the best land would produce that quantity. He could speak from experience because he occupied some very good land himself. He had inferior land, of which it would be nearer the mark to say that it produced the half of 25 bushels per acre. And as to the comparative value of oat straw and wheat straw he ventured to say that wheat straw was the more valuable. It afforded more nourishment to the cattle. It had been said that the land also required rest. He quite agreed with the remark that unless the land had rest there would not be a good succession of crops afterwards, but the rotation whatever it may. And it would be wrong to say

that during a period of rest the land was idle, because there would be a better production in future. As to the malt-tax, although it was hardly the subject for discussion, yet he quite agreed that the Carmarthenshire farmers ought to agitate for its repeal.

Mr. HARRIS (Abersnann) contended that in discussing the question of cropping they must ascertain what mode would best help them to pay their rates and taxes. As to the four-course system he believed it was quite practicable if they had a summer fallow. The first thing he would do after having a summer fallow would be to put in a crop of oats. If after that he could put in a crop of turnips he generally did so. He believed that was the old system, and they must adopt that until they could gain the opportunity to drain their farms; then they might regularly resort to the four-course system. It was easy enough for gentlemen to talk in theory about what was suitable for Towy-side and what was not suitable, but he wanted to hear something practical; he wanted to hear speakers relate what they had tried to do themselves, and how it answered. And he would repeat also that when speakers talked about the expense to which they had gone they should also answer if that enabled them to pay their rent. If that were done if they looked at farming as a thing that was practical and that must be made to pay the rent, it would often be found that certain systems would cause them to come far short on the rent day. And as to manuring, they ought to be very careful. They ought not to use such manure that in winter the essence which should sustain the crop would be washed away. Old manure was best for the purpose.

Mr. DAVIES, the vice-chairman, said that when he heard of the subject for discussion, viz., cropping, he took it for granted that every man would be considered to have proper manures, or the means to supply himself with such manures. Then there would be some room for discussion on the subject of cropping. Some of the speakers had advocated the four-course system. He did not advocate that entirely. He agreed with Mr. Morgan that there should be a rest occasionally. They all knew what the four-course system meant, and that when one course had been carried out it might be followed for another four years with proper manuring. But he took it that a man should never pursue a system so that he must feel he could never pay his rent and taxes. He should take care as far as possible by his mode of cultivation and his manuring that he obtained a sufficient crop. After the four-course system had been pursued twice, he maintained that the land in Wales was not capable of producing another crop without having a rest of 3 years. In that he held a firm belief.

Mr. FOOTMAN (Havodwen), alluding to the capability of land in Carmarthenshire, said that it could carry 25 bushels per acre and a little more.

Mr. PROSSER (Tygwyn) remarked that he could not speak on the subject of cropping, unless he spoke against it. He was quite tired of cropping. Ten years ago he used to cultivate on the average about 40 acres under different crops, but now he had reduced that quantity down to 16. And he saved a good deal by it: he saved a pair of horses and a man, and he repeated that he reckoned that a good deal. Upon the 24 acres formerly under crops he could keep about 20 head of cattle, in fact, he could keep 3 cows with the grass formerly required for the two horses. Now, if the farmers present would pause for a moment to reckon up the difference between his former and present situation they would find he was making a better profit now than formerly by cropping. Besides, look at the anxiety when a man had 40 acres of land under corn, and when he saw the thunder clouds gathering and showering down day after day. The anxiety of that man was tremendous. On the other hand the cattle would thrive nicely during the stormy weather. A man's mind was rendered a good deal easier if only owing to that. Then last year the yield of corn had been very indifferent, and they now also found the price down very much. Therefore it was he could not speak at all in favour of cropping. The reason he kept 16 acres under crops was, that he wanted straw. He could not do without that or something of the kind. He kept four acres of land in wheat, and it always depended on the size of the field whether he put in wheat or oats or barley. He also had four acres of green crops, and sometimes more than four acres.

The CHAIRMAN: But there must be a difference between your yield now upon sixteen acres and your former yield upon forty

Mr. PROSSER: Yes, but I make more profit on my money, and I also do it much easier.

Dr. HOPKINS after promising to reduce his remarks to a small compass said he compared farming to gardening on a rough scale. Farmers should endeavour to keep their land in heart as much as possible. Whenever a certain crop had been taken out of the land it was always a bad plan to follow it with another crop of a similar kind, that is, it was a bad plan to have too many cereal crops or corn crops. They could not do better than to have a fallow crop after a heavy crop, especially in high land which was generally poor. It would be a great deal better to do that than to plough the land and have nothing at all. Crops that had a great surface absorbed more from the atmosphere than from the soil. Therefore when they were turned back into the soil there was a great deal to be gained from it. Ever since he had held a conversation with the agent of Mr. Dillwyn, M.P., he had been of opinion that corn crops could not be grown in this part of the country with advantage, especially wheat. He quite agreed with the introducer of the subject, that as a rule, taking into consideration the different kinds of land, the best crops to be grown were oats and barley. If the land was light a barley crop was very nice. Oats could be grown upon land that would not so well grow barley. Some lands would not even grow turnips or mangles because it was so poor, so clayey, or so indifferent. The different fields on their farms must therefore be farmed according to their capabilities. Every farmer, he was sure, would be fully aware of that. He was strongly of opinion with one or two of the speakers that the more they grew of grass crops in Wales the better it would be both for the contentment of the farmer's mind, and the increase of his pocket, for there would not then be so much fuss made about farming, and money would be accumulated with much greater ease. His opinion was that they should dress as much as possible the surface; that was the most important thing, generally speaking, for cropping. It would be absurd, however, for farmers to call or consider themselves the inheritors of the old independent farmers of the country if they did not grow as much wheat as was wanted, and as much corn crops for feeding their cattle and so on, but not to make it too strongly a point of income. He would repeat, however, that the best plan was to adopt the plan of cropping to the nature of the soil to be cultivated. The soil varied a great deal in Carmarthenshire. One of the speakers had praised highly the farm he occupied. He must be better off than those who lived on the higher banks. Besides, undoubtedly, he was a good farmer, and a thoroughly practical farmer. Nor would he himself deny that considering the price at which corn was brought over here from foreign countries, that they might crop the land in Wales generally to great advantage. Before sitting down he would observe that as a rule farmers in this part of the country could not do better than keep as many cattle as they possibly could, and fatten them as much as possible.

Mr. THOMAS (Derllys) differed from Mr. Morgan on a few points. Mr. Morgan commenced with clover laying. If it was nice clover it would undoubtedly pay better for a few years. When he commenced the cultivation of a field he considered he had finished with that field when he had set it out for four years. With regard to cropping, no one had made mention of hay crops. Mr. Prosser had talked of reducing his corn crops to a very small quantity, but not his hay crops. Now, with the little experience he had himself had he found that hay crops, if not so exhaustive as corn crops, were very nearly so. If a farmer grew corn crops he might continue them for a great number of years. But with hay the land required manure every two or three years. The best farming they could have, in his judgment, was to grow as little hay as possible, keeping as large a quantity of stock as possible on a given acreage of arable land. There was no doubt that a greater quantity of stock could be kept on arable than on pasture farm. But as a great many speakers had expressed their opinion that land that was wet would raise turnips, but not so large a quantity of straw as required, therefore he should say they ought to grow more turnips. By that they would retain a better and larger quantity of stock than otherwise.

Mr. J. P. JONES (Llanllw) formerly had a farm in Pembrokehire loftily situated, on which he found the best system of farming was that he could not grow too many turnips. It was essentially necessary that a farmer should have a good

stock of manure. One gentleman had said that nitrate of soda was the only thing that would pay. He differed from him on that point. Some had spoken strongly about growing turnips and mangels. He would not mention the latter, but when they got a good crop of turnips, it was only a *quid pro quo* that a good cereal crop should afterwards be realised.

Mr. W. E. B. GWRN, the chairman, was happy to say that he agreed with a great deal that Mr. Morgan had said in his able paper, although there were several points on which he disagreed with him. For the sake of discussion he would mention the points on which they disagreed. And first of all with regard to the four-course system of cropping. He did not think, as had been said by Mr. Jones, of Penycroed, and other speakers, that the soil of this part of the country was fit for a four-course shift. Another reason was this, he always looked forward to having very good grazing upon the second year's laying. He had adopted the system of sowing a good mixture of seeds after a green crop, and he invariably obtained a most excellent year's grazing after a second year's laying. That was a most important consideration, and ought to be borne in mind. He always sowed a good mixture, and what he meant was he put down seven or eight different sorts of seeds. Some bloomed and ripened early, and some would not grow so well in autumn, and when the former became dormant the latter were coming up to take their place. That also was a material point. Great stress had been laid upon the mischief of growing corn. But if they kept a large stock of cattle they were bound to have a large supply of corn, if only to obtain a large supply of straw for fodder. He knew from experience that unless they gave bedding to the old and young stock to lie upon, they might feed them as much as they liked, but they would not thrive so well as they would upon a good bed. But speaking of the land of this country he maintained that it would be better for to till it with corn than to let it be in grass. There were thousands of acres in the country that would grow grass well enough, but the difficulty was how to make it grow corn. On the very poorest land, if a certain quantity of artificial manure were used, corn might be grown very well; indeed, it might be made to grow corn better than anything else. On the low land corn would grow very well; it was on the high and dry land where the difficulty was felt. Let a farmer use three or four hundred weights per acre of bones or dissolved bones or phosphate, and his land might be made to produce something better than those miserable crops of ferns which could now be seen where the land was in a state of nature. Oats could easily be grown on such land. It had been well said that it was a great advantage for a farmer to have a good supply of oats in his haggard. He did not agree with Mr. Lewis respecting the value he had got upon oat straw. But there was a peculiar crop he grew himself, which was a mixture of barley and oats, and was called shipris. He had about twenty-five acres under that crop, and had always found it to pay. When the barley was inferior the oats were good, and *vice versa*. He had grown that crop for the last five-and-twenty years, and could safely say that during that long period the crop had not missed three times. Well, it might be asked—What are you going to do with it? He would answer that it was better than barley and better than oats. He did not mean to say that it was more feeding than barley, but the cattle would eat it better. He did not like to give oats to any cattle except horses. With those who kept a large quantity of stock it was becoming very general to give young cattle corn, because it saved hay. They had been cramming it down the throats of the poor beasts, whereas if they had been fed with some good harvested straw it would have

been much better for them. He would recommend to those who reared and kept stock to try the mixture he had named. He could assure them that the crops he realised were exceedingly large. Some of them might think he was wandering from the subject. Another crop that had been spoken of was furze. He had been thinking of growing furze himself; but until this year had not been able to find a suitable place. Nobody knew the value of a crop of furze except those who used them. He had seen cattle on the mountain side in winter when he had been hunting looking well, and when he saw a good round-looking cow he always asked what she was fed upon. Now, upon inquiry, he had learned that those cows on the mountain were fed upon furze. Perhaps Mr. Brodie would laugh at him, but he was convinced that the growth of the furze was deserving their attention. In North Wales it was a very common thing for a crop of furze to be sold for £10 to £15 per acre.

Mr. LEWIS (Llwynfedwen) remarked that in the growth of furze there would be no danger or anxiety about the harvest.

The CHAIRMAN endorsed Mr. Lewis's remark. Then there was another great consideration—viz., their rain-fall. The rain-fall in the north of England was much greater than in South Wales. It was not the number of very wet days they got in South Wales which broke their hearts. They had many days when the rain-fall was next to nothing; but it was the drizzling rain which ruined the harvest, and which proved so very harassing. Turning to the question of manure he recommended that the poor land should have a good supply of artificial manure. The cost would not be enormous—say, from £1 to £1 3s. per acre. And every sovereign a man invested in artificial manure he would get back in the crop of corn realised, and as a rule he would get more than the worth of his money.

Mr. JONES (Penycroed) inquired how the Chairman used his manure?

The CHAIRMAN said he applied it to corn. When he first used artificial manure, he went to one of our most able men, and asked his opinion, and in consequence he tried two crops of barley as an experiment, the one with artificial manure, the other without. He could assure them that the field that had the manure applied to it ripened a week before the other. It got the start from the commencement, and kept it all through. Ever since then he had used manure to the corn. His system of cropping was a six years' course. He begun with breaking up the clay, either for barley or oats. He did not grow wheat except for home use. First came a crop of either wheat or barley or oats. Then followed another crop of corn with either 2 or 3 cwt. per acre of artificial manure. Then he had a grass root crop. Then he had barley with seeds for the mixture of which he had spoken. Then he mowed his first crop of hay, taking care never to let the hay get ripe. It did quite as much injury to let the hay crop get ripe as to take a crop of corn out of it. Then he had a second year's crop of hay.

Mr. JONES inquired whether the Chairman laid his manure for two years for his grass crop.

The CHAIRMAN answered in the affirmative. The first year's grass would be of artificial growth, the second year's grass a natural growth. The third year's grass would hardly be worth reaping.

Mr. JONES further inquired whether in a crop of shipris the barley and oats ripened together.

The CHAIRMAN answered in the affirmative.

Mr. MORGAN criticised the various observations passed upon his paper, contending that it was sound in its theories, and justified by experience.

THE OVER-PRESERVATION OF GROUND GAME.

One of the best attended meetings that the members of the Shropshire Chamber of Agriculture have had since the Society was inaugurated, was held in Shrewsbury, on March 18, when the question of the over-preservation of ground game was discussed. The meeting was presided over by Mr. D. F. Atcherley, the vice-president of the Association.

The subjoined letters were then read by the Secretary:

House of Commons, March 11th.

Dear Sir,—I am sorry that my parliamentary duties here

will prevent me from attending at the Shropshire Chamber on Tuesday next. I have a particular objection to the over-preservation of ground game, and should be glad if any remedy could be devised which would be acceptable to the tenant and the landlord. I consider that rabbits are the worst of all vermin to the farmer, and most destructive to all crops in the open field, as well as to young plantations. Hares are not so bad, unless they are extremely numerous; and I should be sorry to destroy them entirely, as I have some consideration for those

who are fond of coursing, which I am not. The only way that I think we could obviate the evil would be to make ground game property, and thus render it liable for damage done to the holder of the soil. I should be very glad to know the decision of the Chamber on the subject, which is very important. I went from the Central Chamber, a few days ago, to the Chancellor of the Exchequer, on the subject of the malt tax, and from the expressions that fell from him I think it not improbable that he will transfer the duty from malt to beer. I also attended on the subject of the savings banks, but we could do nothing with him as to preserving the present rate of interest to depositors.

Yours faithfully,

J. R. ORMSBY GORE.

London, March 12, 1870.

Dear Sir,—I regret very much that the day for the discussion of the subject of ground game should unfortunately have been fixed just at the time when the state of Parliamentary business quite prevents my coming down, but, as you request my opinion on the subject, I have great pleasure in giving it. In considering this subject, our attention must not be confined to it as it relates only to landlord and tenant. Indeed, if that were the only aspect of it, I question whether it were not the best thing to leave it to contract and good feeling; but of late years the question has been much complicated by the system of renting shootings, which is now done to a very great extent by people who, being strangers to the neighbourhood, and, for the most part, ignorant of country pursuits, are liable to do injury both for want of knowledge and from self-interest. These lessees having no interest in the land, and too often no sympathy for the farmer, it often happens that they care nothing about the injury done to the occupier of the land, caring only to cover their own expenses of rent, keepers' wages, &c., by the sale of the game, and especially the rabbits, and, in the present state of the law, they are able to do this with impunity, unless very stringently tied down by agreement. It appears to me that the most simple way of getting over this difficulty would be to do away with the "fiction" that game is the property of no one until it is dead, and to make it subject to the same laws as other property, both for its protection, and for the liability on the part of the owner to pay for any damage done by it. By this means the saddle would be on the right horse, and he who derived the benefit of the game, would be responsible for the loss which it occasioned to others. I know that it is often objected that you cannot tell to whom the game belongs, but this can occur but in very few instances. There is very seldom any real doubt about the ownership. It must in reason be the property of him who has the beneficial use of it. I send you a bill on the subject of the game laws in Scotland, not that I approve of it generally, and some parts I consider very objectionable, but the main difficulty, that of simplifying the recovery of damage done, is met by the clauses 6 and 12, and I am disposed to think that if those two clauses alone were to become law, we should hear very little more of the game difficulty. When the owner knows that he will have to pay for the injury done by it, he will give up excessive preservation. Hoping that these hastily sketched ideas may be of some use in eliciting something more useful from others,

Faithfully yours,

EDWARD CORREY.

Cabley, Bewdley, March 15th, 1870.

"Sir,—In consequence of ill-health, I much regret not being able to attend your meeting to-day on that important question—the over-preservation of ground game—and I will ask you to convey my views through the presiding chairman, which are—That nothing less than the placing of ground game entirely in the hands of the tenant farmer will meet the necessity of the case. I trust if the over-game-preserving landlords could once be made aware of the enormous injury done, not only to crops, but personal feelings, they would no longer resist; and to those who are satisfied with such a moderate quantity of game as would afford healthful recreation in pursuit of, the alteration in the law would make little or no difference, but once in operation would add just as much more good feeling between landlord and tenant as the present system tends to prevent. The gamekeeper could no longer be required, dictating to both master and man upon the farm, and his nocturnal visits across the homestead with his dog, to entice the domestic cats to some trap laid a distance off

to snare them, would be dispensed with. Then thequire would not be so often detained to hear reports from his confidential keeper as to this or that tenant having committed himself by some breach or other of their local game laws, but would have more time to ride over his estates and view the great improvements that would be sure to result from the alteration; and in meeting his tenants he may see a smiling cheerful countenance instead of a grim, care-worn face, with empty pockets, which a few years' occupation of a game farm is sure to produce. I speak from eighteen years' experience, and feel sure that during that period I am a loser of eighteen hundred bags of corn, through the destruction by hares alone, not saying a word about loss of mutton, beef, &c., to the public as well as to myself.

Yours truly,

BENJ. DUDFIELD.

The CHAIRMAN said he had been told the other day by a gentleman, who, he thought, was a little overdoing the matter, that in Shropshire one-half the farmers had the shooting themselves ("No, no; and a voice, "Not one-tenth.") Well, many farmers had farms of their own, which, of course, altered the matter. At any rate he thought it ought not to be treated as a class question.

Mr. R. JASPER MORE, who was very warmly received, said he was aware strong views were entertained for and against the game-laws in Shropshire; he felt it his duty, in the interests of the Chamber, to counsel that whilst all facts which tended to illustrate any views should be freely stated, the sensitiveness of many persons on that subject should be borne in mind by those who take part in the discussion. He noticed that the noble president of that Chamber stated in the winter that he would have voted in favour of another subject being discussed at that meeting, but he did not gather from his remarks, as reported, that he was averse to the discussion of the subject at all, for he himself set the example of discussing it at the annual dinner of the Chamber, though the county members present, as Lord Granville remarked last year, did not venture within a hundred miles of it (laughter). If the rabbits were really given on all estates to the tenants, as he believed Lord Bradford said he gave them on his property, or if they were systematically kept down, he believed that sensitive persons would have no reason to fear agitation on the game-laws. He would, however, ask that meeting to bear in mind that the over-preservation of game was one question, and the game-laws, to a great extent, another. The game-laws embraced fiscal questions of licences for killing and dealing in game as a means of taxation and revenue, as well as the varied questions of the preservation of birds in this country not here indigenous, the law of trespass in pursuit of game, the jurisdiction before which poachers are brought, the punishments they are to receive, the power entrusted to the constabulary in bringing them there, and, lastly, the payment of the expenses of their prosecution and the maintenance of their families, which is the consideration which most of all jeopardized the existence of the game-laws. For this latter Mr. Read and he proposed a remedy in the rating of woods and game, for which they introduced a bill, the principle of which he found would in part, at all events, be adopted this year by the Government. Now it was clear that the Chamber might pass a resolution against the over-preservation of game without proposing the abolition of a single game-law. It was against the over-preservation, not the preservation of game, that the resolution was directed; in the abuse of sport that is distasteful, not its legitimate use. That was a question on which public opinion might be more likely to be efficacious than law, as well as more productive of immediate results. A committee sat to inquire into the game-laws in 1846, and that committee, contrary to general usage, reported in a different sense to what the chairman, Mr. Bright, desired and expected. No legislation that he was aware of followed from the recommendation or the inquiries of that committee. But when Lord Granville came there and made a speech, which not only all who heard it would always remember as one of the best speeches agriculturists ever had the privilege of hearing, but farmers in all counties felt obliged to him for it—(cheers)—the results of his condemnation of the rabbit where so immediately that in one neighbouring county only he heard that seven landlords gave their tenants the right to destroy rabbits on their farms (applause). He should now content himself with stating that he believed the exact point of the farmer's grievance was, where it existed, against which that resolution was framed, and to meet which a bill was to be proposed

in the House of Commons on Wednesday, and at the same time invited their particular attention to the circumstances out of which it had arisen. The common law, which was founded on the wisdom of their ancestors, gave the game to the occupier. The occupier in nine cases out of ten signed away his right to the landlord, who was then able, by statute law, to appoint any one else to kill it for him. Pheasants and partridges, together with ground game, were equally the occupier's by common law; and this point an excellent relative of his, who was President of the Wenlock Farmers' Club at the time when the game law committee was appointed, and they sent a witness to be examined on their behalf, told him he found farmers did not seem to understand then, but he hoped all in that room were aware of the fact now. Perhaps in the majority of cases farmers did not care for shooting at all, and were perfectly ready to preserve game for their landlords. The extent of their grievance, he believed, was, that when they had signed away their right, they found hares and rabbits often increase to an extent that interfered with agriculture (applause). The object of a resolution passed against the over-preservation of ground game by a Chamber of Agriculture was, he took it, to draw attention to the fact that hares and rabbits did that injury to agriculture which rendered it obligatory on the landlord, when he had received the right of shooting from the tenants, to keep ground-game down. He would quote, in proof of the great damage done by game, not from a farmer, or from a game-keeper, but from the President of the Royal Agricultural Society, an extract given by Mr. Corbet, secretary of the Central Farmers' Club, in his essay, which was probably the best that had ever appeared on game-preserving. Mr. Pusey says, "With respect to trials of the relative amount of food consumed by hares and sheep which used to go on at the time of the game-law committee, that though two, three, or four hares may not eat more than a sheep, you cannot keep them in one place like a sheep; that he should like to decide for himself, if he were a farmer, whether hares should eat his green crops or not; it is an interference with the farmers' crops; and where a man has been taking pains with his land, and spending a good deal upon artificial manure, and endeavouring to grow good green crops, it must try his temper very much;" and Mr. Corbet adds, "And his pocket too" (applause). The bill which Mr. Wykeham Martin would introduce on Wednesday, contained the following important clauses, but directed only against rabbits, to which Mr. Beaumont, a leading county member, added "hares" (Cheers): "From and after the twenty-fifth day of September, one thousand eight hundred and seventy, it shall be lawful for any tenant, or any person employed by him, and having his authority or permission, to kill rabbits on the lands occupied by him, any agreement or covenant to the contrary notwithstanding; and any agreement reserving the sole or exclusive right to kill rabbits shall be null and void." Amendment of Mr. Beaumont: Leave out after first "the" and insert "passing of this act hares and rabbits shall not be deemed game within the meaning of the game laws, nor shall any of the provisions of those laws apply to the taking, killing, or destroying of hares or rabbits" (cheers, and cries of "Beaumont for ever"). The question they may expect to be argued in Parliament was whether it is desirable that the state should intervene between landlord and tenant. Of course now that both sides of the House of Commons had agreed that the state should so step in, in part of the empire, the doctrine of state interference could not be repudiated as formerly. The question that would be asked was, was game-preserving a case in which on grounds of public policy landlord and tenant should not be left entirely the agents in England, as it had been settled they shall not be in other respects in Ireland? Already in England the State did interfere in contracting, as, e. g., the truck act prevented employers to contract to supply food to the employed. But it might not be argued on Wednesday at all; for if the Government brought in a bill for Scotland, they may allow the mover of the bill to apply it to England, which he would do if the Scotch bill is satisfactory. Having thus stated the question he was desired to do, he would express his hope that this discussion would, in fresh cases, relieve the tenant, without causing ill-feeling between him and his landlord (applause). He would repeat that in Shropshire, as far as he knew it from the Southern Division, game was not especially over-preserved. It was a county of which it was difficult to affirm any general

proposition, because it may be felt there were cases of great individual hardship, but on the whole it was not considered a game-preserving county, as Mr. Corbet, in his essay, testified; for he ranks the game-preserving counties in the following order: Norfolk, Suffolk, Nottingham, Lancashire, Yorkshire, Cambridgeshire, and Essex, but he did not mention Shropshire. He would end by stating that it was not the preservation, but the over-preservation of game that was objected to. He was glad to make this as clear as possible, for the preservation of game, as the game-laws were seldom spoken of at a farmers' meeting without some one making what, as a humble member of them, he felt was a disgraceful imputation on country gentlemen, that they would not reside on their estates if it were not for the game, as if game was the only tie between them and their responsibilities (applause). But that argument, which was extensively used, more frequently became what he may term the "paterfamilias" argument, that, unless game were preserved up to battue point, fathers of families were afraid eligible young men would not visit their houses, as if the charms of their daughters ought not to be superior to shooting, as he found young ladies' charms generally were (laughter); or as if men, who visited only on such terms, should not be made to know that in this day, if they are to maintain their position, it was necessary for gentlemen's sons to be something more than mere leaders of the sports of the people (applause). He concluded by moving "That, in the opinion of that Chamber, the over-preservation of ground-game should be discountenanced."

Mr. JOHN BRIDGMAN seconded the motion. In that neighbourhood, or in Shropshire generally, a much better feeling had sprung up in reference to game during the last few years, for many landlords were now giving the game to their tenants, especially ground game (applause). If he could see this generally done with respect to ground game it would be nearly all he could desire, and he believed there were many more of his fellow-farmers who were of a similar opinion (applause). He thought they had more to look forward to from themselves and their landlords than from anything the state may do (applause).

Mr. EVAN DAVIES thought that was one of the most important questions that that Chamber had yet undertaken. He believed he was echoing the sentiments of everyone there present, as well as of every farmer in England, when he said that he should deeply deprecate any remedy for the over-preservation of game that would have the effect of debarring the nobility and gentry of the country from a fair amount of field sport; but, at the same time, he could not help thinking that the present system of sporting was un-English, and unwise, and unaccompanied by that healthy exercise that ought to accompany it. It could not be kept up and pursued without repeated and murderous affrays between poachers and keepers, and without engendering in the hearts of the tenant-farmers of the country an unmitigated evil. He well remembered the time when the gentlemen of England were content when they went out shooting if they could kill a sufficient quantity of game for their own tables; but since that foreign system had been introduced they were not content unless they could turn out in the middle of the day, and, in the course of two or three hours, shoot down a load of game (Hear, hear, and applause). He did hope and trust that their landlords would see the evil of this system ere it was too late. Mr. Gladstone, in introducing the Irish Land Bill, made a remark which might equally well be applied to the question they had then under discussion. It was, that if the wants of the people had been attended to thirty years ago, they would have been satisfied with a much less sweeping measure than they would be at present. He repeated that he hoped the gentry of England would see the evil of their ways, and would no longer permit the over-preservation of game on their estates. He most sincerely wished that Mr. Mechi, who had raised his voice against the destruction of the small birds, would raise his voice against the destruction of the birds of prey, which was carried on to a very great extent by the preservers of game. Mr. More had justly pointed out that the game was the property of the tenant; but, he would ask, how could the tenant avail himself of that while he subjected himself to a six months' notice to quit? (applause). When a man's capital was invested in the soil he was tied to his farm, and could not leave even when he was overrun by game. Let them, then, give the tenant an Act enabling him to claim compensation for his unexhausted improvements, and it would be

a step in the right direction. He believed that by continued agitation they would get what they needed—indeed there were many landlords who were already beginning to see the ill effects of the over-preservation of game. He had read that day in *Bell's Messenger* an instance of a landlord who had given his tenants notice that they could destroy all the hares and rabbits upon their farms (applause). He repeated that if they continued to agitate, and put the matter fairly before their landlords that they would not be unmindful of the wants of their tenantry (applause).

The Rev. G. BOTTFIELD would just tell them what his own practice in reference to game was, and if it did not meet with their approval, he did not wish them to say that it did. His practice was this—rabbits, his tenants may kill as many as they pleased (Hear, hear). He did not let them shoot them, however; for, in the first place, they could not keep them down merely by shooting; in the next place it caused difficulties with the keeper, and he thought also that the farmers' young sons got into the habit (the remainder of the sentence was unheard, in consequence of the general expressions of disapproval). As to hares, tenants could course them whenever they asked permission. If he thought that those regulations were pressing heavily upon his tenants, he would rather by the half give up the game altogether than be on ill terms with anyone. There were one or two words he would like to add, and that ought to be borne in mind in reference to the damage done to the farmer's crops by game. It had been said that that damage could be settled by arbitration; but he did not think himself that that would be satisfactory (No, no). He believed it would be the cause of perpetual dispute between landlord and tenant, for there might be a lot of the crops destroyed, and they could not say how it was done, whether by the game or what (No, no, and other expressions of dissent). Well, he would just make this other remark. When he gave his tenants the right to kill rabbits, he found that they increased to a considerable extent, and if the tenant was to be protected by having the game in his own hands instead of the landlord, the landlord should be protected in some way also. If they did the landlord damage, he should be allowed to kill them, for they destroyed the landlord's plantation, and would do him as much harm as the tenant (A voice: "Well done," and laughter). It had been said that the game was the property of the tenant. So it was; and it was because the tenant gave up his right to it that the difficulty arose. Let farmers all say they would make their own reservations as to the game, and they would gain their point at once; otherwise, they must have legislation to help them, which he for one should be sorry to see, for he thought it would not be at all satisfactory. If a man came to him whom he knew to be a good farmer, he should not like to refuse him a farm merely over a question of the game, and but few landlords, he hoped, would do so. He would repeat, in conclusion, that if farmers as a body would say what they believed to be the proper mode of procedure, that, as public opinion was brought to bear upon the question, they would get what they desired—freedom from the excessive preservation of game—and for himself, he would add, that he would rather see game abolished altogether than that any ill-feeling should exist between tenant and landlord.

Mr. LEGH (Foxall) said as to an agreement it was true, as Mr. Davies had remarked, that with a six months' tenancy it would not have the desired effect; for, however good a landlord may be, a new landlord may step in and alter the agreement entirely. He thought himself that if the ground game were done away with the matter would be settled at once.

Mr. FOWLER would relate to them some of the sufferings he had undergone in consequence of ground game. Some twenty-five years ago, when a young man, he took a farm under a gentleman he had every confidence in. For some years they met on the most friendly terms. When he entered on the farm he used to produce 18 bushels to the acre. He laid out his entire capital upon the farm, and brought it up to forty bushels to the acre (applause). He repeated that his entire capital was laid out on the farm, and at the end of some years his landlord was laid up in consequence of ill-health. He suffered for some time, and the management of the estate and the game came into the hands of another party. That person went over different parts of the estate, and the result was that he said "Oh, Mr. So-and-so has a well-cultivated farm; see what crops he has got; his farm is too cheap; what is to

be done? We must have more rent from him, or we must stop him having the game." He must "cry back" here, and state that when he took the farm it was understood that he (the speaker) was to have the game. He had the right to destroy every rabbit, but the person in charge of the estate had made up his mind to take possession of the game even to the rabbits. He (the speaker) said, "No, it was my understanding that I should have the game, including the rabbits, which I have systematically destroyed." Well, the agent came to him one day with two documents in his hand and said, "Will you give me the entire right of the game?" He said "No, I will do nothing of the sort" (applause). He refused to sign an agreement to that effect, and upon that the agent produced the other document, and said "Then you must take this." It was a notice to quit (cries of "Shame, shame"). "Which will you take," the agent repeated, "That or this" ("shameful")? He (the speaker) was a young man at that time, and, very naturally, he was rather taken by surprise. He begged for a limited time, till the next day, to consider the matter, but, said the agent, "It must be done now" (renewed expressions of disapproval). "Well," said he, "Will you give me two hours? I will ride as fast as I can to my father, who is in Birmingham, and ask his advice." The agent repeated, "One or other, whichever you like" (cries of "Who was the landlord?"). He would not name the landlord, but if they wished it he would. Well, he signed the agreement and gave up the right of destroying the game, and from that time forward he was smothered with them to an extent that completely destroyed his crops. He would give them an instance of it. During the last harvest that he gathered off the farm himself, the keeper—that gentlemanly man the keeper—(laughter) said, in a very patronising manner, "Oh, will you please to sell me a load of barley." He said, in reply, "There are fourteen acres of barley there which ought to have produced forty bushels to the acre, and instead of a load I will measure four acres out of the middle of the field, providing you will be at the expense of clearing it away" (laughter). That was one field only. He had another field of wheat, of seven or eight acres, the manure for which he had bought at the rate of 7s. per ton, and had carted it from Birmingham, and for which he had two years' rent and other payments to make. That field had been well attended to, and kept as clean as possible, and when he went there at harvest-time, what did they imagine the produce to be, off that eight acres of land? Why, he never put a scythe or sickle into it, because, after a careful calculation of the expenses, he found it to be to his entire advantage to give up the field and the crop upon it together (Shame). His successor tried to get the crop in, but he went on only a very short time. He thought they were very short of statistics to show the quantity of game in the country, and the damage it did. That it was a difficult thing to get at he readily admitted, but urged that something may be done by observing the quantity of hares and rabbits sold in the markets, which would, he thought bring them somewhere near it (hearty applause).

Mr. POOLE (Bicton) suggested that by fencing off a portion of a field, so as to keep out the game, and comparing it with the produce on the other part, they might come to some conclusion as to the damage done.

Mr. MATTHEW WILLIAMS would ask them, in the first place, whether the tenant farmers present had at any time suffered, or been disturbed in their tenancy, by the over-preservation of game, or by the undue interference of keepers? (Loud cries of "Yes, yes"). That being so, he thought he might proceed with what he had to say, for it could not be said, as it had been said of a former discussion, that they had not been able to make out "a case"—a fact, however, which he denied, for he thought they had on that occasion, as on the present, a very good case. "The question of game was a very vexatious one, and had caused more unkindly feelings in the mind of the tenant than anything he knew; indeed, it had, in many ways, a most injurious and prejudicial effect upon the tenant. That being so, he thought it would be admitted that there must be something radically wrong in the over-preservation of game, and he felt pleased at being the humble instrument by which that question had been brought forward for discussion. He had had a discussion with some of his friends on that subject, and they said "What do you want troubling yourself with this matter? You live under a landlord that never interfere with his tenants."

A MEMBER: Who is it?

Mr. WILLIAMS replied that his landlord was the Duke of Cleveland, and he was proud to add that there were some others in the county who also gave to their tenants the great privilege of killing the ground game. These were the good landlords, and he hoped it would be borne in mind that the laws of the land were never made, or intended for the good man. But all were not good either among landlords or tenants, or any other class. If every landlord was a good, honourable, and well-intentioned man, there would be no need to talk about the game laws, but it was a fact, that he hardly knew a year to elapse without seeing the tenancy of some good and worthy man sacrificed to the vexatious question of game, either—as had been remarked by the veteran chairman of the Wenlock Farmers' Club—by the interference of the keeper or the agent (applause). Much as he admired their worthy friend at the other end of the table (Mr. Botfield) more especially on the occasion of his very able speech on the Education question, yet he thought Mr. Botfield's suggestion in that case would be at best but a very slow process of arriving at the object they had in view (Hear, hear, and applause). There must be a blow struck, firmly and emphatically. Let them depend upon it they must have a legislative enactment to help the farmer before any real good could be effected (applause). He, for one, had been a farmer all his life and he believed he should end so, for it was but few of them who could look forward to anything but being men of toil, all their lives, yet he for one should be sorry, and hoped the time would never arrive when the tenant farmers of England would wish to debar landlords and their friends from the legitimate right of coming to sport over their farms (Hear, hear, and applause). All this he believed farmers generally were ready to admit, and he thought a line may be drawn which would settle the question satisfactorily. If all men were honest, he repeated that there would be no necessity for law, but as such was not the case he could not help thinking that the law must step in. If tenants had the undisputed right of killing the ground game—he meant the hares and rabbits—he had that confidence in the tenants of England that they would never debar the landlords from shooting on the farms, but that they allow it quite as willingly, at least, as they did under existing circumstances (applause). What had been lately said by a Shropshire worthy in another county did not, if it were true, redound very much to the credit of Shropshire. What he meant was some remarks that had been made in reference to game preserving in the county; but he did not think, he must say, that the observations he was referring to would bear the light of day, and he would not refer to them further. He contended that every landlord ought to be anxious to be honoured and respected, not only by his tenantry, but by in all the neighbourhood, and what could be more likely to foster in the mind of the tenant an ill-feeling than to see a landlord let out the game to a person who often had no interest in it except as a mere article of merchandise (applause). The capital of the agriculturist was sunk very largely in the land, and they relied upon "mother earth" for a reasonable return for that capital, and he thought it was a fact that would be borne out by everyone that anything that tended to promote the laying out of capital must be to the interest of the landlord, for a man laying out his capital with judgment was improving his landlord's property. But what could deter a man more from laying out his money than to know that those night marauders and plunderers—the hares and rabbits—were continually on the alert; and when things should look pleasant, and when he should be in expectation of a pleasant and profitable harvest, instead of getting it, he would only see more plainly how far the rabbits and hares had gone, for although some said hares were harmless—(a laugh)—anyone could, by going a little way into a field of barley, gather the crop up in armfuls (applause). By looking at the outskirts of the cover they may think that very little harm was done by those animals, but what was done by the rabbits, but that was not so. He could not see what there was in the shape of a "national sport" in the shooting of hares and rabbits. One set of men went in and drove the animals out, and it was, to him, only like shooting down so many dogs. Yet it was, it seemed, a bit of amusement they liked, and he supposed there was a bit of profit attached to it, for those hares and rabbits, fed by the tenant, by-and-by found their way to the market, and enriched the pockets of the landlords ("Hear, hear," and applause).

He hoped he should not hurt the feelings of any one present if he said he did not believe that those who killed their game and sent it to a market town for sale could in any way be considered benefactors of their country (applause). He thought it helped to fill their workhouses and to swell their county rates, and he could not help thinking, while he and others like him were rated pretty highly, the landed proprietors were not very highly rated (Hear, hear). Tenant farmers felt the oppressiveness of the present state of things in a good many ways, directly and indirectly. If landlords would stand up and say they would do what was right between man and man, and if they would do it, they would get over the difficulty very easily, but unless they did so, the difficulty would be got over in no other way than by bringing the attention of the country and of Parliament to bear upon it (applause). Mr. More had told them that game was, legitimately, the property of the tenant. No doubt it was so, as also that the right of destroying it had been handed down to the tenant by law, but "might" had been brought to bear, to the great injury of the tenant farmers of England, and had taken the place of "right;" and so the full improvement of the soil had been prevented, to the great injury, not only of the tenant, but of the country at large. In his boyhood days it was a pleasure to him to see men out for a legitimate day's sport. There was something invigorating in it, something that tended to create a good feeling between landlord and tenant. He had no doubt tenants generally felt a pleasure at seeing their landlords have plenty of sport (Hear, hear), but no true lover of sport could call what was at present in vogue "sport." He had even heard of a gentleman who begged a lot of birds, which he let out upon a field before they were wanted, and said to his friends, "There, go and shoot them" (laughter). Was that sport? (renewed laughter). If it was, the sooner the better they abolished such sport altogether. The question was one that ought to have been disposed of many years ago (applause).

The CHAIRMAN: Here is a proposition, and until that is disposed of we can discuss nothing else.

Mr. WILLIAMS: I have suggested one remedy, which is to give the ground game to the tenant.

Several VOICES: Make them vermin (applause.)

Mr. WILLIAMS: Aye, anything you like to call them. I do think landlords ought not to prevent us killing hares and rabbits.

Mr. J. BATHER said no one could deprecate the over-preservation of game more than he did. He had no game himself, and there was nothing he disliked to see more than good crops spoiled by game. But the question was, how was the evil to be prevented, and he must say he had heard nothing that day that led him to suppose they were in the right way to get the question settled. They had heard from Mr. More, and he had no reason to doubt that that gentleman was wrong in his law, that when a man took a farm without any stipulations to the contrary, the game would belong to him and no one had a right to put his foot upon that land but the tenant himself, or those he may give permission to. But what did they do? Why, the first thing they did was to sign away all their rights (a laugh). Of course they said they could not help it, that they would get no land if they did not do so. But, he would say, let them go to their landlord, and let them show him (expressions of dissent). His sympathy, he assured them, was with the tenant, there was no doubt about that; but if a tenant took a large tract of land—say, at 30s. per acre, and signed an agreement that the landlord should have the game, he could scarcely look upon it as fair for the tenant to go to the landlord and say, "Let me have the land, with the game, at 30s." If tenants wished to have the game they must show the landlords that they were willing to pay such an amount in extra rent as the game was worth (applause). It was a commercial transaction, and should be put upon that footing (Cries of "Nonsense"). Mr. More brought to them an Act of Parliament, and he said it should enact that the ground game should belong to the tenant, but his (the speaker's) experience was that no sooner did it belong to them than they would sign it away again. And what was to prevent them? No Act of Parliament could. The law may say that no tenant shall sign away his rights, but he knew something of lawyers, and he knew they would soon find a way for him (the tenant) to do so, and the landlords would very soon have the hares and rabbits the same as before (Hear, hear). Farmers had their rights already as re-

garded the game, and if they gave him up, what had they to complain of? (Hear, hear). And if they did do so now, who could tell that they would not do it again? But there was a remedy, and it was what he had before suggested, in discussing another subject—to make a good agreement with a good landlord (Hear, hear). If they took a farm from year to year they were liable to be turned out at six month's notice, and he said it was a contemptible and miserable state of things that land should be let in that way without any security to the tenant. He repeated that the only remedy, in his opinion, was a good, well-considered, agreement between the landlord and the tenant (applause).

Mr. M. WILLIAMS asked Mr. Bather what he proposed to do with all the existing agreements, as what that gentleman suggested would only affect those that may be entered into in future. Nor did he agree with Mr. Bather's remarks, for there could be no doubt that if a man who applied for a farm had any crotchets about the game, he was refused the farm in consequence, and there were always plenty more ready to take it. He would ask Mr. Bather how he proposed to deal with existing covenants?

Mr. BATHER thought if the question were put at all it should be put through the Chairman.

The CHAIRMAN called attention to the resolution before the meeting, and inquired if any gentleman had any further remarks to make upon it.

Mr. EVAN DAVIES would also like to ask Mr. Bather a question, or at any rate to make a few remarks upon what that gentleman had said. Mr. Bather had told them that all the evil lay in the mode of taking and letting the farms, and that it was a simple commercial transaction between landlord and tenant. But were the landlords and the tenants in the same position for making a contract? Were not the landlords' interests bolstered up in every way, while the tenants' interests were not? (applause).

The CHAIRMAN must say he disliked the use of the phrase "a commercial transaction" as used by Mr. Bather, for he should be sorry to see what ought to be pure good feeling between landlord and tenant become a mere transaction of that sort. He would remind them that there was a proposition before the meeting, and as Mr. More claimed the right of reply he would put that gentleman in the possession of the meeting if no one else wished to speak.

Mr. MORE said he wanted the sense of the meeting to be taken on his resolution, and then anyone who wished it would be able to propose a rider, so that gentlemen would have another opportunity of saying what they wished upon the subject. All that he wished to say upon the resolution, before it was put, was to make a remark or two in reply to Mr. Bather's observations. Of course he did not measure his experience against that of Mr. Bather, and he could only say that he was extremely obliged to that gentleman for what he had said, as it was what he (Mr. More) would have said if he had only had the moral courage to have done it (Hear, hear, and laughter). He (the speaker) had told them what the outside world said about farmers when they took a farm and signed away their rights. The speaker then proceeded to show that it might be concluded from Mr. Bather's arguments that that gentleman should be in favour of the Irish Land Bill being extended to England, for the remedies he suggested were substantially the same as were proposed in that measure.

Mr. BATHER: No, no; nothing can be more to the contrary.

Mr. MORE said it was, then, an undesigned coincidence. He (Mr. More) urged the desirability of farmers keeping together to support their own rights, and remarked, incidentally, that an instance had occurred in the county of 3,000 acres being thrown upon the hands of a landlord, the farmers declaring they would have nothing to do with the land until the rabbits were destroyed. Mr. Moore also suggested that farmers should, if necessary, pay for the game at the rate, say of one shilling an acre, although it was, in some cases, valued as low as sixpence. Surely it would be worth while for farmers to make some such offer as this. Mr. Botfield had told them that the landlords' interests had to be considered as well as the tenants', and that if the latter had the game they would preserve more than was preserved now (A voice: "No danger"). Well, hear what Mr. Corbet, the farmers' friend, and secretary of the Central Farmers' Club, who had given the best description of the farmers' grievance that had ever been published,

says. That gentleman gave an instance of a landlord who gave his tenant notice because he (the tenant) preserved so much game. He (Mr. More) assured them he had been in some parts of Norfolk where he had seen a nobleman's estate on which every tenant had the right to shoot, and he never saw more ground game than he saw on those farms. On one occasion he had the pleasure of dining with a Norfolk farmer, and, being late, he excused himself by saying, as was the fact, that he had to drive very slowly up to the house for fear of being upset by the numbers of hares and rabbits that were in the way (laughter and applause).

The Chairman then put Mr. More's resolution to the meeting, and it was carried with acclamation.

Mr. M. WILLIAMS proposed as a rider that hares and rabbits should be the property of the tenant, subject to the landlords' right of shooting.

The CHAIRMAN: They do belong to him at present until he signs them away.

Mr. WILLIAMS: Then I will put it in this form, "That the words 'hares and rabbits' should be struck out of the Game Laws."

Mr. PINCKNEY (Cressage) seconded this.

Mr. EVAN DAVIES maintained that tenant-farmers were not in a position at present to make an agreement with their landlords as to the destruction of the game; for instance, in the taking of farms men of small capital were put in competition with men of large capital. This being so, men of small capital were compelled to take farms on almost any terms, or go without them altogether. Tenants could get no compensation for the money they laid out from the landlords, and there was the evil. The tenant should be put in the position of making a good bargain with his landlord, and then he could make one, and it would be his own fault if he did not. At present he was not in that position (applause).

Mr. BATHER objected to Mr. Williams' proposition, urging that it was out of order, as they had not come there to discuss the Game Laws. He would ask the Chairman for his opinion upon the subject.

The CHAIRMAN said he agreed with Mr. Bather that, strictly speaking, it was not in order, but at the same time he (the Chairman) was very unwilling to offer any technical opposition to what may be the wishes of the meeting (applause).

After some discussion, Mr. BOWEN JONES pointed out that while the Chairman was very anxious to have a full discussion of the question of game, he was of opinion that strictly speaking Mr. Williams was not quite in order. It was their duty to support the Chairman (applause); and he (Mr. Jones) would suggest that, if it were thought necessary, they should have a meeting to discuss the whole question of the Game Laws (applause). He hoped they would allow Mr. Atcherly to do what he believed to be correct (Hear, hear, and applause).

Mr. EVAN DAVIES thought they should allow the Chairman to exercise his own judgment.

The CHAIRMAN thought it would be better to have a discussion upon the Game Laws generally than to introduce them into that discussion.

After some other observations from different members of the Chamber, Mr. Williams withdrew his former resolution and proposed, "That in the opinion of this meeting all tenants ought to have the right of destroying the hares and rabbits upon their farms."

Mr. PINCKNEY seconded this, and it was carried.

AN UPRIGHT JUDGE.—EVANS v. HUGHES.—Peter Evans, farm servant, sued police-constable Hughes for the value of a coat of which he alleged that the officer had despoiled him. The fact of the policeman having possession of the coat was admitted, and he accounted for it in this way: that, passing a field in which the plaintiff was at work ploughing, he saw him with a gun in his hand; a partridge got up on the wing, and he saw the plaintiff shoot it and take it up, and he halloed at him. At this stage the judge interposed, and asked the defendant what possible business he had to interfere in a poaching case? (Applause). The judge cautioned him, and all other police-officers, remarking that it was quite enough for the ratepayers of the county to pay policemen for doing the duties required of them; and if people wanted gamekeepers, they must pay for them out of their own pockets.—*Carnarvon Herald*.

A BELGIAN FARM OF TEN ACRES.

(From Professor Voelcker and Mr. H. M. Jenkins' Report in the new number of the R. A. S. Journal.)

The question has frequently been asked whether a farm of ten acres is sufficient to enable a man to keep his wife and family in comfort, and to occupy profitably and completely his own time, without having recourse to other means of earning money, or filling up leisure hours. We propose, therefore, both with a view of giving an example of *la petite culture* on rather strong land, and for the purpose of showing what can be done with ten acres, to give a detailed account of a farm having, excluding buildings and fences, as nearly as possible that area. This little farm is situated in the commune of Haeltert, near Alost, and to a student of *la petite culture* it is almost worth making the journey to see.* The farm belongs to the occupier, Madame Van Weyenberghe, a widow, who has three grown-up sons. Until recently this was the working staff, but now that one of the sons has gone into the world, his place is supplied by a hired man. The grass land is rather more than two acres in extent; about an acre is cultivated as a garden, and the remainder, about seven acres, is farmed on a seven-course system, different from that in vogue in the light-land district. The shift is (1) potatoes or flax, (2) wheat with clover, (3) clover, (4) mixture, (5) colza, followed by turnips, (6) mixture, (7) rye. In the garden about a quarter of an acre of tobacco is grown every year, besides green vegetables of every description; and the spare time of the two sons is profitably employed in budding roses, grafting fruit-trees, and other similar operations, all of which bring in their modest profits.

The land for potatoes is manured with farmyard and liquid manure, and also with guano. No manure is given for wheat, which is sown in October; and the clover (cow-grass) is sown on it in January or February. After the wheat is harvested, a little clover is sometimes got the same year, but not usually. The next year it is cut the first time in March, and immediately afterwards receives a dressing of either liquid manure or Dutch ashes, but the former is preferred. Two other cuttings are got the same year before September; but in that month there is a great prejudice against using it, as people say it has "spiders' webs," and hurts the cows. The succeeding crop (mixture of rye and wheat) receives no manure, but soon after harvest the stubble is well manured and prepared to receive the colza-plants for the next year's crop. The seed having been sown in the previous August, the seedlings are ready to be planted out in October and November. If the season is mild, each plant gets a dose of liquid manure; but if hard frosts are expected, this stimulant is carefully withheld, for fear that the water should freeze and kill the plants. The colza harvest is got in June, when the land is immediately manured, ploughed, and sown with turnips. This catch-crop is got in October, the turnips being pulled and housed; and during the winter the land is sown with mixture. After that has been harvested the stubble gets a heavy dressing of manure, and is sown with rye, which is followed after harvest by stubble turnips. We thus return again to the potato course, in the preparation of the land for which the spade is used as already described. One-tenth part of this course is sown with flax and carrots, the land being prepared for it with extreme care, so as to obtain a perfectly fine and even tilth. The flax (Riga) and carrot seeds are sown together, from the beginning of March until the end of April, according to the weather, but the sooner they are got in the better. A few mangolds are also sown in this course.

The stock kept consists of three milch cows,† and two pigs fattened for home use. In summer the cows are fed on clover and grass, mostly given cut in the stable; they also have a

drink, which consists of nearly a quart of linseed, 4 or 5 lbs. of rye-meal, and 20 quarts of water boiled with a certain quantity of mangold tops. This is enough for two drinks for three cows, so that each cow gets something less than a gallon each time. The first drink is given at seven o'clock in the morning, and the other at four or five o'clock in the evening. When the cows are at work they get, in addition, three meals of rye bread per day, the quantity given being 2lbs. per head each time. In the winter they each get a daily allowance of nearly 4 bushels of turnips and 1lb. of meal. One-half the turnips are boiled, the meal is mixed with water, and the whole, including the uncooked remainder of the turnips, is mixed together and given to the cows in two equal portions, one in the morning and one at night. If a cow has been an unsatisfactory milker during the summer, or when one gets beyond the most profitable limit of age, carrots are given instead of turnips in the autumn and winter, and with this simple alteration in the diet the cow is fattened for the butcher. Pigs are usually bought at four weeks old, or thereabouts, at prices varying from 4s. to 16s. They are fed with boiled potatoes, rye or wheat meal, and buttermilk mixed together, and they are given as much as they can eat. They are killed at ten or twelve months old, weighing from 20 to 24 score, and the meat is kept for household use, butcher's meat not forming an item in the dietary of the family.

The grass land is manured every March with either liquid manure or guano; it is mown in July, and a great part of the aftermath is grazed, the remainder being soiled. Nearly a ton and a half of guano is bought yearly for this little farm. Of the garden culture we shall say nothing, except that it was remarkably well done. Every inch of ground was occupied; and from the number of successfully budded roses and fresh-grafted fruit trees (all destined for sale), as well as from the abundance of healthy vegetables of such species as find a ready sale in the large towns, we inferred that this piece of ground, cultivated during "hours of repose" from the more arduous labours of the farm, added no inconsiderable sum to the family income. In this garden, and on a patch of ground in the farm, we found some of the finest tobacco plants which we saw in Belgium. The young plants are bought at 1 franc per thousand; they are carefully planted in well-manured land by the two brothers, as soon as all danger from frost has ceased, and each plant is attentively watered with liquid manure from time to time. The produce will sell at the rate of £160 to £200 per hectare (4,000 to 5,000 kilos. at 1 franc.), so that our modest area of a quarter of an acre (one-tenth of a hectare) will fetch the respectable sum of £16 at the lowest estimate.

The yield of other crops was very large compared with that on the average run of small farms—namely, in 1868: Wheat, 35 bushels per acre; mixture, 40 bushels; rye, 45 bushels; colza, 1 ton per acre; potatoes, 8 tons. This little farm, remarkable in many respects,* was in none more noteworthy than for two implements beyond the ordinary plough, harrow, and roller. One of these was a turnip-cutter—of primitive construction certainly; but it was the only one we saw throughout Belgium on so small a farm. Its essential parts were—(1) an inclined grating, forming the lower side of the hopper which received the turnips; (2) a wooden roller beneath, fitted with a spiral of hoop-iron knives; and (3) the fly-wheel, which had wooden spokes and a hoop-iron rim. There was no handle; but the machine was put into action by turning round the fly-wheel by means of the rim in a "hand-over-hand" sort of way. Including the wooden frame on which it was set, it cost thirty shillings, and was made by the village blacksmith.

The other "implement" was a waggon. Ordinarily, on even large farms as well as small, one sees a heavy three-wheeled cart (tambri) of the clumsiest description. The Belgian waggons are immensely long in the body, about one and

* The commune has the advantage of being under the sway of a most excellent burgomaster, M. van Meldert, to whom we are extremely indebted for much valuable information and kind assistance.

† The proportion here is one cow to 3½ acres; but no food for them or the pigs is bought; they are entirely fed on the produce of the farm.

* The manure was kept in a water-tight midden, out of doors, under the shade of some trees; and it absorbed, therefore, the greater portion of the liquid.

a half times the length of an ordinary English waggon, and very narrow; the fore-wheels are often placed in *advance* of the head of the waggon, and the hind-wheels at the very extremity of the tail, just *not* projecting beyond it. The waggon on the little farm was designed by one of the brothers, and was built in the village under his direction. The general contour of the body was a modification of that usually seen in Flanders, but it was scarcely more than half the usual length, and was very much wider in proportion; then the wheels, instead of being placed as far apart as possible, were, *tout au contraire*, as near together as could well be. Throughout our tour it maintained its place in our minds as the best designed waggon we had seen in Belgium.

The question has been asked more than once, "What is really the annual income of a holder of 10 acres, one year with another? Does he get, as labourer, the same wages which he pays for assistance; and does he get, in addition, any profit per acre in his character of a farmer?" These questions are difficult to answer even approximately; but we venture to offer the following reply as regards the small farm which we have described. It must be borne in mind, however, that so favourable a statement could hardly be given for many small farms in Belgium.

Our calculations will be simplified by the following facts: The cattle, the pigs, and three persons are fed by the produce of the farm; therefore, as our small farmer cannot eat his corn and sell it too, we shall not include either rye, "mixture," carrots, turnips, potatoes, or clover in his money receipts. We shall also assume that the pigs are invariably killed for home consumption. On the other hand, we shall include no *pur-chases* in the expenditure, except guano and young pigs; and we shall also consider that when a cow is "fattened" off during the winter she will realise just enough to buy a milch cow in her stead. We also think we are justified in considering that the wheat is sold; that is, indeed, the almost invariable practice. Seven acres cultivated on a seven-course system give exactly one acre per course; but we have only the crops off two complete courses to sell—viz., wheat and colza. In addition, we have one-quarter of an acre of tobacco and one-tenth of an acre of flax (excluding the seed), which are prepared at home, and therefore yield the utmost possible amount. The crop of flax with a good farmer weighs about 725 kilos. per hectare when prepared; this will give about 30 kilos. for one-tenth of an acre, and in the following balance-sheet we have taken about the mean price paid in December, 1868,

according to the return issued by the Courtrai Chamber of Commerce. The price of wheat after the harvest of 1868 is taken from the same source, and the amounts given for colza and tobacco were actually realised. The butter finds a very ready sale in the neighbouring towns, and the price given is about the mark. The wages, rates and taxes, and the price of guano, are at the current rates. The garden produce will probably not be thought too highly rated at £10.

Estimated Receipts (1868).

	£	s.	d.
1 acre wheat, 35 bushels at 7s.	12 5 0
1 acre colza, 1 ton at £21 10s.	21 10 0
1-10 acre flax, 30 kils. at 4 fr. say	5 0 0
¼ acre tobacco, 400 kils. at 1s.	16 0 0
Butter from 3 cows, say—			
240 lbs. each = 720 lbs.* at 1s.	36 0 0
3 calves at 15s.	2 5 0
Garden produce	10 0 0
			103 0 0

Estimated Expenditure.

	£	s.	d.
Wages of 1 man, at 1 fr. per day, taking the average of the year	14 10 0
1½ ton guano at £12	18 0 0
Rates and taxes 3s. 3d. per acre	1 12 6
2 pigs 4 weeks old at 7s. 6d.	0 15 0
			34 17 6

Gross profit ... 68 2 6

Against this return we must put the wages of two men, on the same scale as if they were hired; but we think that nothing need be allowed for the wages of the proprietress, who is very old. A man gets 75 centimes per day and his food in summer, and 45 centimes in winter with nourishment. Taking the larger sum all the year round, on account of the additional labour, which they perform in the garden, &c., the amount will be £23 16s. The rent is another item which should be deducted; and computing this at 45s. per acre, it would amount to £23 10s. We therefore have a remaining sum of £23 16s. 6d., or 45s. 6d. per acre as the farmer's profit; while the actual income of such a peasant proprietor, if unenumbered, would be £56 14s. 6d., after paying for his food. That a considerable sum of money is really saved is shown by the fact that the existing farm buildings were erected only a few years ago at a cost of more than £800.

EXTENSION OF THE HALF-TIME SYSTEM TO AGRICULTURAL DISTRICTS.

At a meeting held in Leicester, a paper upon this subject was read by Lieutenant-Colonel ARROYD, M.P., who said: Hitherto the only plan of compulsory attendance at primary day schools, which has received the sanction of the Legislature, is that under the half-time system embodied in the Factory and Workshops Act—that is, half-day attendance at work, and half-days at school. Where the conditions of labour permit of this arrangement, the system works admirably. I can speak with the authority of a long experience, having for upwards of twenty years taken an active part as manager of my own factory schools, where there is now a daily average attendance of 900 half-timers, 230 day scholars, and 300 infants, a total of 1,430. Under this system, the enforcement of the attendance of children at school is imposed on the employer, as a condition of admittance to work; and he must obtain from the schoolmaster a voucher proving the attendance of the child at school during the previous week. These provisions are enforced by penalties, to which both the employer and the parent are liable. No child is permitted to work under eight years of age; and the period of half-time attendance at school continues from eight to thirteen. Under the cumbrous system in America, there is the greatest possible difficulty in enforcing school attendance; and, although special officers—called "truant officers"—are appointed for this purpose, yet the number of truants, compared with the number of children at school, is exceedingly large. There is no such difficulty in enforcing school attendance under the indirect compulsion of the Factory Act. In the year 1868, there were about 81,000 half-timers, and out of this number there were

only 90 convictions against persons employing children without school vouchers, and 27 informations; and this, notwithstanding a very strict inspection. Thus, with a simple machinery, at a very slight cost, strict and regular attendance at school is enforced. Respecting this principle of indirect compulsion, I am happy to adduce the evidence of Mr. Tremeneheere, one of the commissioners on the employment of children, young persons, and women in agriculture. In clauses 76, 77, 78, and 79, of the Second Report, he says: "The only principle approaching the nature of compulsion, in regard to the education of the young of the labouring class above the grade of paupers, that has, up to this time, been admitted into the legislation of this country, is that of connecting the obligation of school attendance with wages-earning employment. This principle rests on a just view of the extent to which parental obligation may be enforced, and permits the Legislature to say that if a parent benefits by the labour of his child, he shall be compelled to apply a portion of the child's earnings in the fulfilment of his duty to his child, and for his child's advantage—viz., in procuring for it a certain amount of education. Public opinion in this country justly sanctions the enforcement of such an obligation upon the parent by fine or imprisonment. The Workshops Regulation Act, which embraces all kinds of handicrafts, not included in the Factory Acts, in defining 'employment' to mean occupation in any

* We should have placed this item somewhat higher, but for the fact that the cows are used for tillage and draught purposes.

handicraft, whether for wages or not, under a master, or under a parent, thus describes the liability of the parent in case of a child being employed in contravention of the Act." (Sec. 7.) "The parent of, or the person deriving any benefit from, the labour of, or having the control over the child . . . shall be liable to a penalty of not more than 20s., unless it appears to the court before whom the complaint is heard that the offence has been committed without the consent, connivance, or wilful default of the parent or person so benefited, or having such control." "And by sec. 12, this penalty is recoverable summarily in the manner directed by the Act 11 and 12 Vic., c. 43, which gives the power of imprisonment if the penalty is not paid." The question remains to be considered, how the principle is to be applied to the children employed in agriculture, and how it is to be adapted to the altered conditions of labour in the rural districts. It must be remembered that all children, save and except those engaged in agriculture, are now subject to this condition of compulsory attendance at school, as a certificate to half-time work. We may best estimate the amount of educational work still to be done by an approximate calculation of the total number of children of school age—say between five and twelve or thirteen—engaged in outdoor labour in the agricultural districts of England and Wales. Mr. Tremmaheere, in clause 82 of the report before alluded to, resting his calculations on the census returns of 1861, arrives as a total of 41,090; that is, about one-half of the number of those already in attendance at school under the factory half-time system. The figures are not formidable. Already a large proportion attend the national or other schools, and hitherto school accommodation has been in excess of school attendance. But the universal complaint on the part of school managers and masters is, that children leave the day school for work at the age of ten or eleven, and drop their attendance after that period. This complaint is confirmed by the table issued by the Committee of Council on Education, showing the comparative age of scholars in schools inspected by the inspectors of schools in Great Britain. In 1868 no less than 72.28 were under ten years of age, and 9.91 were between ten and eleven, 7.85 between eleven and twelve, and 5.52 between twelve and thirteen; that is a total of 23.28 between the age of ten and thirteen, or together 95.56 under thirteen, leaving only 4.44 above the age of thirteen. For the most part the great proportion of the education of the agricultural children ceases at ten years of age, and can be of little avail in after life. No primary instructions worthy of the name, which shall form the habits and ripen the intelligence of the pupil, can be given unless regular attendance be secured at day schools to the age of thirteen years. Evening classes are worse than useless for children of tender years, who are more ready to fall asleep than to learn lessons, which it is cruelty to enforce. Hence the conclusion is forced upon us that some limitation of children's working hours is absolutely necessary to make room for school attendance. But, first, the age at which work shall commence ought to be fixed. On this point there is a difference of opinion between the two commissioners, Mr. Tremmaheere and Mr. Truettell. The latter inclines to believe that ten ought to be the age below which no child ought to work, and that ultimately it might be raised to eleven or twelve; whilst the former considers that no minimum age should be required, under which children should not be employed; except in the case of those who look after horses, when he would fix ten as the minimum. He further states that in many counties—as Yorkshire, to wit—children go out to work at eight or nine years. From this conflicting evidence, I draw the conclusion that there is no valid reason why there should be any deviation from the minimum age of eight fixed by the Factory Acts. Moreover, under this limit, there is abundant opportunity for attendance at infant schools, and the acquisition of the art of reading before entering in the half-time schools. A satisfactory examination in reading at or after the age of eight might be insisted upon before the child goes to work at all. This preliminary examination has been tried with beneficial results by Mr. Paget, of Ruddington, formerly M.P. for Nottingham. We proceed to consider the adaptation of half-time system to agricultural labour. Clearly, half-day attendance is out of the question. Half the day would be lost in going backwards and forwards from work to school. Alternate days' schooling has been tried by Mr. Paget; but as farming operations depend much on the weather, the system could not be

strictly applied. During harvest all school attendance must of necessity be suspended. Of all the plans proposed that of the Hon. Edward Stanhope, her Majesty's Assistant Commissioner, seems to me the most feasible. Fortunately he is himself present at the conference to explain his own proposition; and the value and importance of the meeting will be considerably enhanced by his presence. I may add that his inquiry extended over the county of Leicester. Briefly stated, Mr. Stanhope's proposition is to require 100 days' school attendance in each year, from eight to thirteen, which would hardly interfere a single day with the exigencies of the farmer, and put the parent to no expense beyond the payment of small school fees. These 100 days' attendance might be given almost exclusively during the winter months, so as to interfere to the slightest possible degree with farm labour. That feature of the plan which most commends itself to my approval is its complete harmony with the principles of the Factory Acts, and with all past legislation. One further condition might be necessary to insure a sufficient amount of instruction, namely, that no child who should have attained the age of thirteen, after the passing of the promised Education Bill, should be allowed to work full time without a certificate of competency under the 5th standard of the Revised Code. An outcry may be raised should these provisions for compulsory attendance be enacted, that there is a deficiency of schools. This would be a refreshing change from the present state of things, where the complaint is that there is a lack of scholars to fill existing schools. But what are the facts as to existing school accommodation? In the report of the National Society for 1869 it is stated that, "as far as the Church of England alone is concerned, the Society's census of schools reveals the fact of the 14,709 parishes, chapelries, and other ecclesiastical districts in England and Wales, only 398 are destitute of week-day schools, and at the same time so far removed from schools in adjoining parishes that children cannot attend them. Most of the places unprovided with schools are thinly inhabited, thirty-five per cent. having a population of less than 500. From this statement it appears that there are few parishes destitute of schools, or beyond reach of school attendance. Where new schools are required, I cannot doubt their being built by voluntary effort, aided by Government grants, bestowed more liberally than is usual in poor districts; indeed, voluntary agency is more certain and less fluctuating than Government aid. Periodically the Chancellor of the Exchequer uses the pruning-knife, and cuts down the education estimates, as in 1864 and 1865. Wherever the Factory Act has been introduced, rendering it to the interest of employers to provide school accommodation, there has never been any lack of schools. In the smaller hamlets, where schools do not exist, a convenient cottage-house might often answer every purpose of a school. I have tried the experiment, with satisfactory results, in a village in the East Riding of Yorkshire, where I spend the autumn. An ordinary room in a cottage, with a brick floor and a fire-place, comfortably accommodates a group of about 20 children in a day school under a mistress. The same place is used as a club room in the evening, where the farmers' lads and young men can sit and smoke and read the newspapers. During two evenings in the week an adult class is taught by a schoolmaster from a neighbouring village. Upon the whole, I believe that a habitable room of this kind is preferred by the pupils, children or adults, to a more handsome and pretentious fabric, built strictly in accordance with the regulations of the Committee of Council on Education. Of the success of this proposed extension of the half-time system to the agricultural districts, if fairly tried, I have not the slightest doubt. Small farmers may at first take alarm at the condition of a school attendance, and the interference with the children's work; but this alarm will vanish after a slight experience, as it has done with employers brought successively under the operation of the Factory Acts. All trouble of making out the certificates of school attendance rests with the schoolmaster, and the farmer has only to send the children to school for the requisite number of days. Intelligent labour is in the long run cheaper than ignorant labour, and the introduction of scientific farming has necessitated the training of a superior class of labourers to that of the old clodhopper. Any pecuniary loss of work by school attendance will be more than compensated to the employer by the improved character of the farm servants. Let us hope that the social condition and morality of agricultural labourers will be thus gradually improved.

THE FACTORY SYSTEM OF CHEESE-MAKING IN DERBYSHIRE.

A meeting of the members of the Derbyshire Agricultural Society has been just held to receive the report of the committee appointed at the annual general meeting of the society on the 24th of December. The chair was taken by the Duke of Devonshire. The secretary read the following report of the committee:—

At the annual general meeting of this society, held on the 24th December last, a committee, consisting of Lord Vernon, the Hon. E. K. W. Coke, Lieut.-Col. Wilmot, V.C., M.P.; the Mayor of Derby (T. W. Evans, Esq.), J. G. Crompton, Esq.; Mr. Murray, Mr. Nuttall, Mr. Coleman, Mr. Grestorex, Mr. Sims, Mr. C. Canner, Mr. Faulkner, Mr. T. Travis, Mr. M. Walker, Mr. Jacob Smith, and Mr. C. Finney, was appointed to take into consideration the question of manufacturing cheese by the factory system as adopted in the United States of America and Canada, and the desirability of its introduction into this county. Dr. Hitchman and Mr. Alderman Roe were subsequently added to the committee. The committee have met frequently and gone into the subject fully. They have invited opinions against the system, and in favour of it, and the result of their deliberations is, they consider that there are satisfactory grounds for expecting, should the system have a fair trial, the following advantages: 1st, Greater uniformity in the quality of English cheese than at present existing. 2nd, Enhancement of the quality and value of the product of milk in dairies which from poor plant and absence of good accommodation, is now producing an inferior quality of cheese. 3rd, The removal of an arduous occupation, frequently deterring men of capital, from domestic considerations, from entering upon farms in which cheese-making forms a prominent feature. 4th, Improvement in the value of land, from improvement in the value of product. 5th, Generally, the introduction of uniformity of system, best plant, best skill and supervision, into a manufacture hitherto subject to great uncertainty and vicissitude. They have decided that one factory shall be established in Derby, and another in a dairying district in the country. Mr. Alderman Roe has placed at the disposal of the committee a most suitable building situate in Siddal's-lane, Derby, rent free for the first year. It is considered well adapted for the purpose, and the thanks of the committee have been accorded to him for his generous assistance. The situation of the country factory has been a matter of grave consideration with the committee. It was thought at the outset that it would be necessary to erect a building specially for the purpose, whatever quarter might be selected; and, as the committee concluded it would be out of their power to build a factory, and that it would be unfair to expect any gentleman to do so at his own cost, without some guarantee that in case of the failure of the system he would be recouped in part the cost he had incurred, it was suggested by the committee that it would be desirable, under the circumstances to establish a guarantee fund to induce offers to erect such factory. It has been accordingly arranged that a fair rent should be paid for the building after the first year, and that in case the system failed in the course of three years time, 40 per cent. of the cost of the building should be refunded to the proprietor. The committee have great pleasure in being able to state that the necessity of erecting a building for the sole purpose, has been obviated by the liberal offer of the Hon. Mr. Coke, one of the members of this committee. Several districts were selected as suitable for the situation of the country factory, and local meetings have been held in each to ascertain the facilities that could be offered for establishing a factory, and the quantity of milk that could be supplied to it. The result is of the most satisfactory character, and has far exceeded the most sanguine expectations of the committee. The districts whose claims have been tested by the committee are Sudbury, Shardlow, Longford, Etwall, and Weston-under-Wood, but several other localities were named to the committee where the farmers were anxious to have the system at work, and almost equal facilities as to the building and sufficient supply of milk were offered. After careful consideration,

the committee unanimously selected Longford as the most desirable situation, the Hon. Mr. Coke being prepared to find a house and buildings that could be converted into a factory, and in case it should be ultimately deemed insufficient for the requirements of the case, he would erect a suitable building at his own cost, subject to the conditions guaranteed, and would make satisfactory arrangements for the carriage of the produce from and haulage to the factory. There are absolute promises from farmers in that district to supply the milk of more than 500 cows. The committee cannot omit to mention the liberal proposal of Mr. C. E. Newton, who also offered to erect a factory at his own cost (subject to the guarantee) on his land near Etwall. The Committee think it would be unfair to those farmers who have, in order to test the system, agreed to supply their milk to the factories, not to place them in such a position that in case of failure they would be secured against loss; and they have, after mature calculation, determined to guarantee 6½d. per gallon for the milk, and divide the profits to be derived from the disposal of the whey, together with any other that may be obtained, after paying working expenses, *pro rata*, among those who supply the milk. This Committee have been greatly assisted by the advice and information volunteered by a member of an eminent firm in London who are now the largest exporters of factory-made cheese from America. It is through this firm that they have been enabled to secure a person thoroughly conversant with the manufacture of cheese by this system from America, and who is now on his way to this country. He is engaged for one year, and to superintend both factories. It is with gratification this Committee alludes to those noblemen and gentlemen who have with such public spirit come forward to form a guarantee fund for the purpose of establishing experimental cheese factories in this county, and providing for the additional expenses to which a new undertaking of this description must of necessity be liable. The fund now raised exceeds £3,000, but the Committee think that this trial is of so much importance to the dairy interest of the county, and the landowners in general, that they hope to see this amount largely and widely increased, so that the call on each guarantor may be as light as possible. The Committee have expressed their thanks to their Chairman, Lord Vernon, the Hon. E. K. W. Coke, Mr. Crompton, and to Mr. Nuttall, Mr. Murray, Mr. Coleman, Mr. Canner, Mr. Jacob Smith, and Mr. Finney, for the trouble and time they have given to this movement in attending as deputations to the several districts. The Committee find that the method of making cheese in America differs so widely from that pursued in this country that they think it prudent to proceed no further in alteration, or arrangements in buildings, until the arrival of the manager from America. They however fully expect to see the system in work about the beginning of April.

This report was unanimously adopted.

THE SALE OF CORN.—At a meeting of the Essex Chamber of Agriculture at Chelmsford, Col. Brise, M.P., in the chair, the following resolutions were proposed by Mr. J. Youngman, and adopted: "1. That the deductions made by corn buyers, on payment to farmers for their corn, are inconsistent with modern methods of transacting business; and the prices returned to Government, by which the tithe-rent charge and corn-rents are regulated being more than the farmer receives, the payments he has afterwards to make are inequitably increased; therefore such deductions ought no longer to be made. 2. That this Chamber hereby requests the discontinuance of such deductions, and that the Council do endeavour to obtain the concurrence therein of the buyers in the Essex markets; also, if necessary, that farmers be invited to unite in refusing to sell their corn to any but those buyers who will agree to pay them in full." Mr. J. S. Gardner moved: "That in the opinion of this Chamber the present mode of getting returns for the tithe averages is fallacious; and

that returns should be made from every corn market in duplicate from the producer and one from the first purchaser." The resolution was adopted, as was another, also moved by Mr. Gardiner, to the effect "That it is desirable that all kinds of grain should be by law sold by weight instead of by measure."

A discussion arose on the Education Bill, Mr. Round, M.P., giving a general outline of the measure. Mr. Jostling proposed, that the Chamber should express its general approval of the Bill; but the suggestion met with some opposition, and ultimately the discussion was adjourned.

AGRICULTURE AND AGRICULTURAL AUTHORITIES IN THE EAST.

At the last meeting of the Lavenham Farmers' Club Mr. FISH read a long roundabout paper on "The Waste of Force in the Economy of Agricultural Production," for which we have not room. The following discussion ensued:—

Mr. HITCHCOCK said it was quite evident from the paper they had heard that Mr. Fish had sat at the feet of his Gamaliel, Mr. Mechi, to some purpose, for he adopted his views; whether they would agree with them was another matter. First, as to the £4 per acre produced by each English and Irish acre of land annually, Mr. Mechi's remedy for this was to break up the twenty-two millions of pastures existing in the country; but if this plan were adopted, what, he should like to know, would become of the 1,500 Irish bullocks which came weekly to St. Ives's market? Where would they get the raw material to feed them upon? As to the philosophical parts of the lecture as to the waste of force, he did not understand them, but as to the loss of force, Mr. Fish would have them believe that there was a great loss of force in having the horses at length, and that two horses abreast would do as much work as three at length; Mr. Fish did not say so, but that was what it came to.

Mr. FISH: I believe they would.

Mr. HITCHCOCK said this argument did not apply to the spindle from an engine; it did not matter whether it was seventy or sixty feet long, or quite close, the driving power was the same, and in thrashing machines the work was done better with the engine at a little distance than when quite close. If the horses were steady pullers and well trained, he did not think there was much waste of force. As to the unnecessary weight of their implements, he quite agreed with Mr. Fish that it would be much better and less expensive if they could do the same work with a waggon weighing 15 cwt. as they did with one weighing 25 cwt. Then again, about leases, they were very good things, but the thing that Mr. Fish and gentlemen of his school, who were talking about leases, wanted, was fixity of tenure.

Mr. FISH: Not I, Sir.

Mr. HITCHCOCK said this idea meant that those who had once got possession of land were to keep it. Mr. Mechi once referred to a farm where they cultivated by steam three feet deep, and where a walking-stick might be run down to that depth. He (Mr. Hitchcock) was at that farm on the previous day, and found that the gentleman who was farming it cultivated 320 acres of sugar beet last year as an experiment, and this year he had 1,850 acres ready for sugar beet, while next year he intended to grow 2,000 acres.

Mr. HAWKINS said he wished to allude to the waste of force in labourers going some distance to their work. One of the evils of the existing system of tenure was the great difficulty there was in providing cottages for the labourers near the farm, and it was a difficulty which the tenant could not overcome unless the landlord would step in to help him. In the neighbouring county of Norfolk Lord Leicester had built good substantial cottages upon the farms, the tenant paying him five per cent. interest upon his outlay. He "himself as a tenant should be pleased to guarantee his landlord five per cent. on his outlay if he would provide good cottage accommodation. He believed there was a great deal of truth in what Mr. Fish had said, but he hoped that no labourers in their neighbourhood had to come four miles to their work, although it might be so near Bury, because there the farms were larger. He believed himself that there was no tenant who would not gladly guarantee his landlord five per cent. for good cottage accommodation near or on his farm.

Mr. TALBOT said he did not know where Mr. Fish got his statement from that the land in the kingdom only produced on the average £4 per acre.

Mr. FISH: I quote from Mr. Mechi.

Mr. TALBOT said Mr. Mechi might be an authority, but he had heard that his farm grew eight or nine sacks of wheat before he took it.

Mr. HAWKINS: We have been told that he has never grown so much on it as the previous tenant.

Mr. TALBOT said he must have used his capital very badly, then. He thought, to say that the land of the country did not produce more than £4 per acre, was a very great absurdity. As far as his experience—which extended over twenty or thirty years—had gone, he must say that he never heard the estimate put at so low a figure. He quite agreed with what had been said about improving the land, while believing that many farms were so well cultivated at the present time that they grew all the corn possible. He believed by an unlimited application of manure, land might be made to produce a great quantity of mangolds and turnips, but then where was the quality?

The CHAIRMAN, Mr. Biddell, thought a six months' notice much too short, and that once or twice that length would conduce to better farming. He agreed with some of Mr. Fish's points; their implements were much too heavy, but in advocating a light steam-engine for the land he was two years behind the manufacturers, for it had been tried and given up, more power being required in drawing the engine across the land than in drawing a certain quantity of rope. As to Mr. Mechi, although one of the pleasantest men he ever met, he thought him a bad authority, and an argument should not be backed up by his statements. He would rather take Mr. Fish's authority than his. He challenged Mr. Fish to show a body of men who cared more for their men than the farmers. The manufacturers only looked upon their men as so many hands. He should be glad to see the labourers better off, but they could not expect a man with capital to join a man who had none. If he did, he should think one had brains and the other had not. There were many things in Mr. Fish's paper which would afford them matter to think over before their next meeting.

Mr. FISH said he did not hold himself responsible for the views of Mr. Mechi, or any other person. He should be sorry even to hold himself responsible for what some of the Liberal party might have said about land or the relation between landlord and tenant, or on Tenant-right. He only held self responsible for his own words, and what he had said was that in order to draw more capital into the land it was necessary that the tenant should have the protection of a lease. He had no sympathy with fixity of tenure; he did not believe it was practicable to give two persons a fixed right in the same land for an indefinite period. But if they wanted to draw out the productive powers of the land, they must give those who invested capital security that they might recover it. The system of leases had worked well in Scotland, and he believed with a good system of leases the tenantry would be contented, and that the prosperity of Ireland would date from the extinction of tenancy-at-will. As to the labourers they overlooked the important part of his argument. He did not say out of the goodness and charity of their dispositions they were to feed and clothe their labourers well, but that simply as a commercial transaction it was a good thing for them to do. They made a great mistake to suppose that the less they paid for their labour the cheaper it would be; on the contrary, the more they gave for it the better it was, for if a man had not the power in him he could not put it on the land. The subject on which he had addressed them that evening was at present very incomplete, and therefore he might meet them on some future occasion to discuss its other branches.

THE EDUCATION QUESTION.

BY THE CROTCHETY FARMER.

Here at least I am on my own ground; for of all the questions which are coming up for discussion in this restless discursive agitating country of ours, there is none in connection with which there is so much that is crotchety as that of education. Take them as they come up before us, as discussed at our public meetings, or promulgated through our public press, we find their name is "legion." And seeing what is broached in them, does it not seem to be quite an impossible thing for a common platform to be made upon which we all can meet? so thoroughly antagonistic do they seem. Am I crotchety in saying that the position of the education question reminds me of the story of the nigger sailor who was taken up to be flogged, and to whom a neat sermon was delivered by the Captain while the nigger was standing with bare back waiting for the operation? Tired at last with the harangue, nigger remonstrated in fashion thus: "If you talkee, talkee—if you floggee, floggee; but not talkee and floggee both." Now we have been for many years talking much more than doing; and talk, "talk talk," as the Yankees phrase it, seems to be more the order of the day than ever. We have an Education "League" and an Education "Union;" but how much "union" is there amongst us? how much of a league together to do is there? Echo answers where, which is all that echo generally appears to be able to answer, and which will typify what we as a nation are *doing* in this same matter of education. Is it very crotchety to say, I wonder, that if each party who has a crotchet would attempt to work it out in some practical fashion or other in place of merely talking about it, more good would result than has resulted. Hence it is that while in no way connected with either one party or another, with "league" or "union," while in fact being crotchety enough to desire to *do* something rather than to talk about doing, I am inclined to go in, on the mere practical view of the question, with those who have, albeit mayhap in a somewhat feeble way, done their best to give their crotchets, it may be, a practical place in the world's doings, and to say to those who are very busy at present telling us what they think ought to be done, "why do you not go and do what your neighbours have done? Your plan may be better than other plans which have been tried; but, then, my friends, the difference is this, you have not tried your plan they have tried theirs." And assuredly it cannot be said of their plan that it has not resulted in something practical. No doubt all that could have been done and that ought to have been done has not been done, but still it is something to say that a good deal has been done. It is no small thing to be able to point out the schools which have been built, and the scholars which have been taught in them, as evidence that if all this had not been done so much the more would have been the mass of ignorance amongst us. A grain of practice in such a question as education is worth a ton of theory. This brings me at once, as naturally it brings me face to face with the two leading bodies by which the "education theory" so to call it, for lack of a better name, although better might be found, is represented. I have already alluded to them when I used the words "league" and "union"; and at the outset I have hereby to declare that I am quite independent of either body. I look upon the question as far removed from the narrow circle of opinions which any one or both of the bodies alluded to may have; and I shall be very thankful indeed if either one or the other of the two bodies named be able to carry out a scheme of education which shall be general and effective. I am only so anxious to see education general, as to be quite indifferent to the fact that any one body may have more influence than another, the question with me being which is the speediest way of bringing about a system of education which shall bring within the reach of all who need it a sound useful education. To which end I confess that I am so crotchety as to wish that I could honestly believe that all the "talk talk" that is now going on was something quite apart from party politics, and only influenced by a real desire to have the ques-

tion practically settled amongst us. I cannot honestly think so, and there are many who are of my opinion in this. It may not suit the position of every one to say so, but I can say so freely and fully; for, as I said before, I am an educationist, not a leagist or a unionist. But how can I come to any other conclusion than that I have come to, that the present phase of the question is, to say the least of it—to put it in the mildest term possible, tinged with party politics, when I know that I can, with unerring certainty, tell to which body any one belongs as soon as I know of what colour his party politics are. Knowing this quantity, to put the matter into algebraical form, and I can soon tell you the other: given a man's politics, found the side he takes, the "League" or the "Union." And if so, and so it is, I am in the position, belonging to neither the one body or the other, to say to both that things being so, things are wrong; and just by so much the more that you advocate your views from your side of the question *only*; just so much the more do you retard the chances of a satisfactory system of general education being adopted. "Compromise" is to some an ugly word, but what in reality is our practical daily life but a life of compromise? The "give and take" principle is your true panacea for many of the awkward evils of life. As a business man, I appeal with all confidence to business men, when I ask, Am I not right in saying that we never could get through life comfortably if we all stood always upon our own dignity, and stuck to our own opinions without considering those of others? It will not do, does not do, to stand on our own little "mole-hills" and say to our neighbours "come." No we must mutually approach each other. The meeting of each other half way in our disputes is a much more easy way of settling things than calling in the lawyer and getting, as a result, a shell, while the lawyer gets the oyster. I have by no means said all I wish to say on this subject, for truly one which has given rise to so many discussions, both by press and platform, and for so many years, may afford a crotchety fellow like myself an opportunity of putting forth one or two of my crotchets.

A HEAT RACE IN OLD DAYS.—One of the games but the slowest of the four-milers was Lord Kelburne's Purity, by Octavian, and she finished up another remarkable Doncaster Meeting, in which Humphrey Clinker (the sire of Melbourne), Emma (the dam of Cothertstone and Mundig), Fleur-de-Lis, Actonson, Belzoni (the sire of so many fine, brown, and forge hammer-headed hunters), and Memnon, all won, while Mulatto ran second for St. Leger and Cap. I was the last race of the last day, and run in five two-mile heats. Bill Scott won the first heat on Brownlock, George Edwards running him home on Crow-catcher—so called from his having decapitated a crow, which alighted near him in social confidence when he was in his paddock as a two-year-old. In the second heat Scott led away, and Harry Edwards, on Purity, not fearing anything else, "flapped his wings a bit," as he expressed it, as if setting to, and ran in third. Thales won that heat, and Lord Kelburne began to be very anxious, and could not understand it at all. He came down from the grand stand for an explanation, and Croft took snuff in his quiet way, when he was asked what he was going to do, and replied, "I'm going to saddle the mare, my lord: the fun of the fair's only just beginning." It was time to begin with the third heat, in which Purity beat Brownlock by a head, after a slashing finish. Still the mare had not worn him down to her slow perpetual motion level, and hence it was necessary to get something to make a pace. Accordingly, as the chance of Thales was clearly *nil*, his owner accepted £25 to force the running. Tommy Lye worked away, and as Purity's jockey kept kicking him up with his whip, when he could reach him, Tommy's horse kept giving a series of

marvellous shoots, which were somewhat puzzling at first to the little man. Scott tried to get up between them, but failed; and when he did come in earnest, he made a dead-heat with Parity. Half the people had gone home, and Lord Kelburne, who had backed his mare to win him \$500, said that "there will be no dinner to-day." Officials were not so particular then; but still it is remarkable that Bill Scott did not remember that the fact of two horses, which had each won a heat, running a dead heat, disqualified even Thales, though he had won a heat, from starting again. This oversight decided the fortune of the day. Away went Tommy, and the tickling and the "shooting" began again; and although Parity finished quite black in the flanks with sweat, and could hardly be kept out of the judge's box, she got home first, and landed the Plate for "the crimson body, white sleeves, and cap" of Hawkhead.—*Sadale and Sirloin*, by THE DRUID.

SORTING POTATOES.

The unusual and unexpected "cold snap," which occurred last month, found most of the potatoes in this region in the ground. How many of them have been destroyed by freezing, it is hard to tell, but in the fields where we have been there are certainly a fourth of them touched with frost. As is always the case, many of the larger potatoes, that in growing have come near the surface, are frozen either entirely or at the end that was most exposed.

It is not alone this loss of twenty-five per cent. of the crop that we have to regret—though that is bad enough—but the greater damage that may result from placing these frost-bitten potatoes in a bin in the cellar, or in a covered heap in the field. A potato that has only a very small part of it frozen will be sure to decay, and if it comes in contact with those that are ever so sound, will cause them to decay also. A little leaven is no surer to leaven a whole batch of dough, than are a few frost-bitten potatoes to cause the destruction of the heap in which they are placed. The fact that potatoes form one of the best substances for making yeast should show us that we cannot be too careful about putting potatoes that have been frozen wholly, or in part, among those that are in good condition.

We have worked sorting over potatoes in the winter, among which a few frost-bitten specimens had found their way, either through accident or carelessness, and we know whereof we speak when we say that we were never called upon to perform a more disagreeable duty. Picking stones on a New England stubble-field, or opening ditches on a grainfield on a low prairie that is overflowed by water, are either of them bad enough; but they are pleasant occupations compared with sorting a heap of rotten potatoes. There are many things that are very disagreeable to one of the senses, but rotten potatoes are disagreeable alike to the sense of sight, smell and feeling.

The only way to save ourselves from this unpleasant work, and the only way to save such potatoes as are in good condition now from becoming destroyed, is to take especial pains in sorting out the frozen ones before they are put away. In digging, care should be taken to place those that we see are frost-touched on the other side of the row from where the sound ones are put; in picking them up we should make our examinations still more particular; and a like care must be observed in taking them from the wagon into the basket, and from the basket into the bin. Better take every potato in the hand three times than that even a few unsound ones should get among those that have escaped the frost.

Most kinds of stock will eat frost-touched potatoes that are fed to them soon after they are taken from the ground, unless they have already begun to decay; and if we make a judicious use of the frozen potatoes, we may turn them to considerable account. Cattle will eat them freely, if they are not fed to them in too large quantities at a time, and they are put on the green sward where they will not become dirty. Perhaps, however, the best use that can be made of them is to feed them to hogs. If they can be taken soon after they are dug; boiled, mashed, and receive the addition of a little meal, they will help to make up for the deficiency of the corn crop in producing pork.—*Prairie Farmer*.

THE BORDER AGREEMENT.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—Whilst the noted "Welsh Agreement" is excessively verbose—to say the least of it—that of A B and C D appears to err in the other direction. C D enters his farm on the 25th of March, and it is presumed quits at the same season. What then is the "outgoing crop of wheat" he is to take? does it refer to the *preceding* or the *following* harvest? The clause is exceedingly ambiguous; yet I am inclined to the latter as the correct reading; but in that case who is to pay the rent, rates, hoeing, harvesting, thrashing, and carrying out the above-named out-going crop of wheat? and does the term include the straw and chaff? if not, special mention should be made of the fact. Again, a fourth wheat and a fourth clover or other seeds will then leave half the arable land for the incoming tenant to sow with spring corn or green crops. Now, surely, C D should be either bound to do a certain amount of tillage, being paid for same, or to allow the in-comer to have possession of the land not required for wheat as it became vacant. C D should be *compelled* as well to sow a certain breadth of clover or other seeds, not leaving it optional, as it now stands. Farmers should be much more careful in signing agreements than they usually are: too commonly resting satisfied with a *verbal* promise that some objectionable clause will not be likely to be enforced, thereby oftener than otherwise making a rod at some future time for their own backs: new landlords or agents naturally turn their eyes rather than their ears. I could name a case where a landlord refused to allow his tenant, who farmed his land very highly, to take an extra crop on a field the area of which amounted to just a twentieth of his arable land—not, mark you, because he was injuring the farm, but because his agreement bound him to the four-course system.

I am, sir, yours respectfully,
A SUFFOLK FARMER.

THE GAME EVIL.—Game reservations and game preservation are the main hindrances to leases, without which it would be simply absurd to expect that any great and general improvements in husbandry can take place. The landlord objects to a lease lest he should find a tenant "troublesome about the game," and then might have some difficulty in turning him out of the farm, while the tenant, with a knowledge that his landlord is or may be a game-preserved, is scarcely willing to bind himself for twenty-one years to a farm on which a large proportion of its produce is sure to be consumed by the landlord's game. Again, nothing is more wanted on nearly all estates in England than a number of good cottages placed about the different farms sufficient for the accommodation of the farmer's principal workpeople; yet such cottages suggest to the landlord mind nothing but possible haunts of poachers. Not only economically but socially would a proper number of cottages on a farm be good, for there is no doubt that more kindly influences grow up between the farmer and his family and his workpeople and their families when the cottagers dwell on the farm than when the workmen come from a distant village, and are regarded by their employer as merely hired labourers. All this is intercepted by game. Then again, the existence of game on the farms does lead in a variety of ways to the demoralisation of the labouring of the class in the country. The adventurers are tempted by the sport—illicit sport, and others are tempted by the prices at which hares and pheasants secretly caught can be sold, and so low moral tone is introduced amongst the agricultural labourers which paves the way for absolute crime. We say nothing now of the actual destruction of farm produce, which has been raised by the capital the farmer has employed, caused by game preservation, nor of the destitution and pauperism which result from the enforcement of the game-law penalties. These things too are being seriously scanned by our thinking men alike in the country and in the towns.—*The Economist*.

THE OVER-PRESERVATION OF GAME.

A monthly meeting of the members of the Vale of Avon and Stour Farmers' Club was held at Christchurch, when Mr. John Waterfield, of Winkton Farm, introduced as subject for discussion "The Over-preservation of Game; its injurious effects to the Farmers and the whole Community." In the absence of the president, the chair was occupied by the vice-president, Mr. Druit.

Mr. WATERFIELD said he did not expect to be able to throw any new light upon the question, but he should endeavour to call their attention to the evils resulting from the over-preservation of game, and he should then ask them to consider some resolutions with a view to the amelioration and extensive alteration of the game laws. He acknowledged that he was indebted for many of his observations to Mr. Corbet, the secretary of the Central Farmers' Club, and he should also add a few facts gathered from their own locality. In the outset he declared that he was not an enemy to any manly sport or exercise, and he did not object to the preservation of game under proper limits, the just right of the tenant being respected. He did, however, strongly object to battue shooting, and to the practice of breeding game for the purpose of selling it to the poulterer and fishmonger of the country towns. At a public dinner in Norfolk some time ago, a large practical farmer said, "The squires are fast degenerating into poulterers." But it might be asked, "Has not a man a right to do as he likes with his own? and what is it to us if my Lord This or the Right Hon. That chooses to add to his income by breeding rabbits and hares for sale, just as the farmer does sheep or pigs?" Unfortunately the tenant-farmer had a great deal to do with the matter. If my Lord would only mark his hares and rabbits on the sides the same as the shepherd did his flock, so that when found straying or trespassing they might be pounded, it would be a different matter. But now the question is all one-sided. Many landlords—and he was happy to say that his principal landlord did not—had all the pleasure of shooting the game, or of letting the shooting, while the farmer had the simple satisfaction of keeping the game. He pays dearly enough for the keep of it on his farm; he pays for the keep of the poacher in prison; and he pays for the keep of the man's family in the workhouse. When the poacher comes out of prison, he is looked upon as a thief, and nobody cares to employ him. The farmers don't like to do so, for fear of offending the keeper who, in many cases is worse than the landlord. Increased taxation follows, from the poachers wanting employment, and thus it is not a question how much the landlord gets by every head of game, but how much the tenant loses. No one can deny that a large head of game—or rather vermin, for he spoke of hares and rabbits more particularly—did great injury to the surrounding lands. In fact, the injury was incalculable, and it certainly was not creditable to those noblemen and gentlemen who had so long permitted the continuance of such a plague. The late Mr. Pusey, at one time a game preserver, and president of the Royal Agricultural Society, wrote thus: "Even if you ascertain that three or four hares do not eat more than one sheep, you cannot estimate the amount of injury to a farmer, because the hares are not allowed to help themselves and go everywhere where they ought not to go. The positive loss and annoyance to a farmer is very great. It is an interference with his crops, and must try his temper very much." Mr. Waterfield then stated that an eminent valuer had informed him that whenever valuation and arbitration respecting game were resorted to, he had never yet known the farmer get one-half of that to which he was fairly entitled. He then pointed out at some length the great evils occasioned by the over-preservation of ground game, and observed that he was pleased to see that at a recent meeting of the Leicester Chamber of Agriculture a strong resolution against the prevailing system was passed. Rabbits, he was ashamed to say, were now included in the game laws. Could they, he would ask, call that an enlightened age, in which a man might be sent to prison—and be deprived of his liberty, and his family of his support—who by chance killed or caught a rabbit, perhaps bred and fed on his own garden,

bank, or field? If he be convicted and cannot pay the fine he must go to gaol, out of which he comes a poacher, and feeling strongly the injustice which had been done to him. "Lead us not into temptation" is our daily prayer; but can any one say that the over-preservation of game does not hold out temptation to poor men which it requires a strong mind to resist? He then read the following extract from a letter written by an extensive occupier in one of the best farmed counties in England: "I shall allude to hares in the first instance, considering them to be most objectionable; they are in the habit of congregating together, and there may be seen as many as from 100 to 200 or more in fields of 40 acres, feeding on the best and sweetest herbage. Game chiefly abounds on light soils, and dry seasons greatly favour their destructive habits. The cereals being of kinder growth, and naturally of sweeter quality, be they wheat, barley, or clover, and being constantly eaten day and night, and all the year round by the game, does it not become evident that they destroy and consume wheat which should have been additional food for man and beast? But hares are very destructive to crops in May or June; always on the move, they cut their way through the corn and clovers, and to a very serious extent do they clear off roots, in some instances acres together. Independently of the loss mentioned, which appears as it were sheer mischief, the corn thus cut off will attempt to grow again, but will never be forward enough to cut with the other portion of the field at harvest, and thus injure the sample of produce, already diminished in yield. It may be a pretty sight to see scores and hundreds of hares in an enclosure; but does it strike the beholder they are eating the farmer's produce? Is it just, I ask, that land capable of producing food for the country should be allowed to monopolized by game? Is it not sickening to the farmer, after his best endeavours, to see this sad destruction of his hopes and management by the consumption in excess of game? Game, more or less, must look to the land for its subsistence. Norfolk, Suffolk, Nottinghamshire, Lincolnshire, Yorkshire, Cambridgeshire, and Cheshire may be considered as special over-preserving game counties. Great quantities of game are carried off by poachers—far more than is conceived by the proprietors—which at once demonstrates the folly of such extravagant hordes of game. Yet, I believe, there is a growing disposition to reduce this great evil among landowners, and I believe that it would be carried out more extensively were it not for neighbouring preservers vying with each other who can kill and keep the most game. It may be said we must be aware of the character of our occupation before accepting it. We conceive we do; but it is only by experience that we gain any idea of the amount of destruction caused by an over-supply of game. Looking over the hedge is one thing, and walking through your infested fields is another. It is there we become at once astonished and disgusted. Hares are much attached to swedes, particularly in severe weather, and the amount they destroy on this crop is greater than what is consumed. They attack several bulbs, and as soon as the opening is made, the crows, the wet, and subsequent frosts complete the havoc. The only preventive is to pull the swedes, and cover down; yet here we have an extra expense through the over-preservation of game." Mr. Waterfield, after censuring Mr. Gladstone for his new "sliding-scale certificates" making rabbits game, alluded to the mean practice of sending game to the poulterers or to Leadenhall market. He then remarked that the abuses and injustice traceable to the over-preservation of game were endless, observing that the higher and better the farming, the greater was the damage done. In fact, the farmer paid a terrible tithe for it on corn and in rates and county expenses. Farmers, he observed, could have little to urge against poachers unless it was their maintenance out of the rates. A correspondent of the *Mark Lane Express* writes: "We have seen magistrates the receivers of stolen goods, egg buyers, gentlemen the companions of keepers and watchers, tenants with characters traduced, crops consumed, and no redress, and labourers reduced to evil by the high premium placed upon

success in crime—viz., pheasants' eggs bought at 12s. per dozen." Poaching, continued Mr. Waterfield, is an insidious disease; it grows upon a man; but it is by no means regarded as the highest order of crime, although the fines and penalties and costs are so ridiculously above all other offences, that it reflects a disgrace upon those who enact such laws and upon those who impose such penalties. He next directed a word or two to the agents and bailiffs of estates. There were some sharp, unprincipled agents who made it a point to reserve the right of the rabbits. It was often difficult for the landlord to hear the truth of the matter; but he (Mr. Waterfield) strongly advised all tenants to see their landlords a little oftener, and not let them have their views second-hand. He would ask whether an agent was doing his duty when he witnessed in silence a tenantry half-ruined by rabbits, and who knew that his employer was cursed outright at every farmers' market ordinary? A ten-pound prize, or a fine speech at an agricultural meeting, can never outweigh the abuses which they sanction and the injustice they commit. To the landlord, then, the farmer must look for a redress of his injuries. Let him be content with moderate sport instead of wholesale slaughter; and let him try the experiment of turning to the farmers to provide this sport for him. Let him break up his bands of watchers and keepers. Let him give, on principle, the tenants a right to destroy the rabbits and course the hares, stipulating that no injury shall be done to a neighbouring farmer. Above all, let him not let the shooting over the tenant's head: if he does not care for it, let the other be consulted. He well knew that there was a certain kind of hesitation in some quarters to let the tenants have the shooting on any terms; but they were now getting beyond the times of serfs and slaves. He said most advisedly that some of the worst cases of unpopularity had occurred where a stranger hired the shooting, after, perhaps, the occupier had been for years in comparative quiet. To the landlords alone they must look in order to remedy the present state of things; and the demand was neither unreasonable nor unprecedented. In fact, an alteration must soon come, and those landlords who held out the longest would be the most unpopular. Mr. Waterfield then alluded to a meeting of the Warwickshire Chamber of Agriculture, held on the 28th January, on the subject of the game laws, and quoted largely, in support of his views, from the speeches of Mr. Mann, Mr. Martin, M.P., Mr. Forster, M.P., Mr. Newdegate, M.P., Mr. Bromley-Devonport, M.P., and others. At that meeting the following resolution was unanimously adopted: "That rabbits and hares should be the absolute property of the occupier of the land, and that any agreement to the contrary be null and void." Here, then, they had the opinions of M.P.'s, large tenant farmers, and others, not one of whom upheld the game-laws as they now exist. Depend upon it, the more fully the game-laws are discussed, the more fully will be revealed the frightful evils and injustice that arose from their operation. He sincerely hoped that good counsels would prevail, and that such alterations might be made as would tend to the satisfaction and good feeling of all concerned. What a farce it was for a landlord to give a silver cup, of the value of £5 or £10, for the best crop of mangolds or swedes, at the same time that his hares were destroying scores of pounds' worth of roots. They need not go far from Christchurch to see the shameful destruction which was caused among the swedes by the hares. He lately saw a field where there was not one swede left above the ground, all having been eaten off. Fancy the feelings of a tenant under such circumstances! But what redress for this wrong would he get? He would be told, "Oh, we shall shoot by and by, and then we will send you a tough old hare or two." However, the rabbits or vermin mostly belonged to their sworn friend and protector, the keeper. One loathes the very name. They all knew what authority he exercised, a power very much beyond his position in life, and which he often misused. To him the commonest act of farming was one of suspicion and distrust. The farmer and his men were continually under his supervision. He stands by the mowers to see that they don't harm his nests; he struts into the reaping field to make sure that no one hurts his birds. The boy with his scare-crow, the shepherd with his dog, and the little girl and her kitten, are all objects of his hatred and tyranny. The keeper lays traps for the labourers, and rejoices in the downfall of his fellow men. He whispers characters away in the ears of his employer, and constantly makes ill-

blood between landlord and tenant, and as has been well said by an eminent judge, "He is the greatest blot in the English landscape." The rabbits being mostly his perquisites, these animals which do the farmer so much harm, above all others, he is most anxious to preserve. These vermin, which the law declares the tenant has a right to destroy as vermin, the landlord transfers as a right to his keeper. How, he would ask, can a man properly respect himself when he knows that he is more or less at the mercy of a self-sufficient underling? He may try his best, but all his efforts will be thwarted. What pride can he have in his occupation when hares and rabbits rob him alike of his credit and his profit? Over game preserving lessens the production of the soil, stays the full employment of capital, and more the fair aim of industry. And now came the question—How can such a state of things be remedied? Does not the tenant take his farm with his eyes open? Is not the game in the first instance his own property, unless he choose to sign it away? Has he not a right to destroy hares or rabbits unless he consents to the contrary? What, then, in the face of all this can be done? Abolish the game-laws altogether. Enact that a man should never take a farm without having the game with it. They really did not want to trouble the Legislature at all. Lord Malmesbury made use of a noble expression the other night in that room. He said that when a tenant objected to anything that reasonably ought to be had or done, if his landlord did not consent to it, the landlord ought not to have any property at all. And so said all of them. In a word, let the landlords do to their tenants as they would be done by. The farmers of England were not enemies to sport at the right time and place; they liked to see gentlemen enjoy it, and they did not object to a fair head of game. On the other hand, battue shooting was not fair sport; and the rearing of large quantities of game and then systematically selling it, was slowly but surely undermining the character of the English gentleman. Let the landlord and tenant rely more upon each other. Let the landlords free themselves from the thralldom of the officious, scandal-carrying, mischief-making keeper. Let them address their tenantry as a Noble Duke once did—"Now, gentlemen, I mean to make you my keepers, and I hope when I come you will be able to show me some sport." That hope was always realised, and no one has better sport or stands higher with his tenantry than the Noble Duke. Mr. Waterfield then proceeded to remark that, besides the injury to the pocket and the ruin and misery caused by the over-preservation of game, it was impossible not to deplore the lot of men in their own locality, who had been obliged to leave their farms, ruined in some cases, and broken-hearted in others; and it was not all encouraging to see the high prices that were paid for shooting in that neighbourhood. One thing, however, was certain, the amount that game preserves were let for ought to be rated to the poor. The next grievance to which he would allude was that of allowing the police to be gamekeepers. What right had the game-preservers to the members of this force at the expense of the ratepayers? The persons and property of the ratepayers ought to be protected by the police, but surely a policeman looking after game could not be looking after their property. He would also call upon his hearers to bear in mind that the expense of game prosecutions, coming as it did out of the poor-rates, was a most shameful thing. Why should the ratepayers be called upon to pay for the prosecution of poachers and for their maintenance when in prison? Let the cost fall upon the right shoulders, and they would soon see the game-laws altered. Depend upon it if the great game-preservers had to pay for the maintenance of the poachers they sent to prison, the present game-laws would not long continue. Let no man be sent to prison for taking a hare or rabbit. God never made man to be shut up in a gaol for taking four-footed vermin like these, which ought to be destroyed, because they destroy the very bread which these people too often want. Poaching could never be prevented in the midst of great game preserves and woods of miles in extent, where food for the people ought to be growing, and many a man was made a pauper for life through the operation of these laws. He (Mr. Waterfield) would have a law of trespass, and a moderate fine recoverable in the County Court, but he would not have these cases come before magistrates, most of whom unfortunately were game preservers. After several other observations, Mr. Waterfield concluded by suggesting the adoption of the following resolutions: "That the

keeping of ground game and over-preserving of pheasants is unfair to the occupier, and a check to enterprise and improvement in cultivation; that the rabbits under all circumstances should be given over to the tenant to destroy; and that hares also be the property of the tenant to course, as he may think proper." "That all damages done by game shall be paid for under the award of two practical farmers, one chosen by the landlord and the other by the tenant; and that in case of not agreeing an umpire chosen shall decide, and whose decision shall be final. Such awards ought to be deducted from the rent, and recoverable as all other just claims now are."

Mr. CARPENTER had suffered from game himself, but he believed that the landlords would have plenty of sport if they allowed the ground game to be killed.

Mr. MINTERN said that if the landlords gave the tenants the right to kill ground game, they would have as much sport as now.

Mr. J. DRUITT, jun., was of opinion that the poacher was a thief, and ought to be punished as much for stealing game as for stealing poultry. As to Mr. Waterfield's proposed Act of Parliament, it seemed to be an unnecessary interference between man and man, and there was too much tendency to legislate that way already.

Mr. CHARLES REEKS said that Mr. Waterfield had taken a very one-sided view of the question, and had he (Mr. Reeks) known that that gentleman was about to introduce the subject as he had done, he should have been prepared with a reply. Mr. Waterfield had read portions of Mr. Corbet's pamphlet, condemning the over-preservation of game, but he had omitted those portions in which Mr. Corbet defended the landlords and sportsmen. Game and rabbits, according to the present law, belong to the tenant, and if he transfers his right to the landlord, it is his own act and deed. The farmer does not require a licence to kill hares and rabbits. Mr. Reeks thought that the operation of the game laws was not so bad as Mr. Waterfield had represented; and he remarked that even if they were abolished, a poacher would have no right to go on land and take game. Game ought not to be the property of anyone who could knock it down. There were a great many farmers who liked sport as well as their landlords, and who would not like to see the game laws abolished.

Mr. CARTER was sorry that Mr. Waterfield had left rats out of the question; for they did as much damage as hares and rabbits, and they injured the feathered game by destroying the eggs. He was glad to preserve eggs and game for his landlord, and was always glad when he could provide him with a good day's sport. He rented under a gentleman who allowed him to take the rabbits, and he was sorry he had not more hares to give sport to a gentleman who kept a pack of harriers for the amusement of his friends and neighbours. He was always sorry when he could not find a hare to show some sport.

The CHAIRMAN said they were very much obliged to Mr. Waterfield for introducing the subject, and his paper was a very fair one. They should bear in mind that Mr. Waterfield did not object to a fair day's sport, or to the existence of a reasonable amount of game. That he stated at the outset, he was, however, mistaken in one thing. The game laws had not been entirely overlooked by the Club; for he (the Chairman) had himself introduced the subject some time since. The Club had discussed the subject, and some resolutions were come to representing conclusions which the members believed farmers generally had come to upon it. The game laws were much less stringent in this country than in almost any civilised country in the world. On the continent of Europe, in America, and even in Australia, game laws had been introduced. In France, birds were lost owing to want of preservation. Salmon had been nearly lost for want of preservation, and so had many birds and beasts which formerly existed. Mr. Waterfield had attributed the game laws to the feudal system. Many clever people besides their friend talked a great deal of nonsense about feudalism. He didn't know if many of those present read Smollett, or were acquainted with his novel of "Humphrey Clinker;" if not, he would advise them to procure that book, as it was both amusing and instructive. Smollett made old Mat Bramble express his disgust at the fashion of quoting the feudal system for everything, and said that he expected the use of trunk hose and buttered toast would both be accredited to the feudal system. Their friend traced the game laws to the feudal system, but

there was no connection between the two in fact, but only in his lively imagination. The game laws consisted of two distinct things—one a money revenue on sporting, and the other a protection of property. If sporting was a luxury he did not see why it should not be taxed; he thought the tax on licence might be largely increased, and the increase given in aid of the poor-rate. He thought it would be a righteous appropriation. They knew that laws for the protection of the revenue, whether relating to game, spirits, or tobacco, or anything else, were more stringent than in ordinary cases. Certain penalties were imposed, and if the offence was proved the justices could not mitigate beyond a certain extent. They were bound by Act of Parliament—they might fine £20, but could not fine less than £10. But with regard to all that part of the game laws it was a fiscal matter—it was a Chancellor of the Exchequer's question rather than a farmer's. Beyond this the game laws contained a provision against killing game out of season—that was for the preservation of the species; and there was a provision against killing game on a Sunday. But besides this, the whole game laws consisted of enactments against trespass. Farmers would not object to this. A man should not be allowed to trespass on another person's land under pretence of taking game. No man would like for the vagabonds of the country to trespass over his land, and be allowed to say, "We are gentlemen sportsmen, and come to take game." The only law affecting the game was really one to prevent trespass. The grievance, in truth, complained of by farmers arose not from the law but from the bargains which one man made with another. When a man had possession of the land he had possession of that which ran over it or flew above it. He wished men and boys, too, were prevented from shooting birds other than game birds in fields in the very gardens of the people. The simple fact was that where there was a desirable thing to be had men would try to have it, and if it could be sold for money men would sell it, and after selling it they should be content with the purchase-money and not want also the thing sold. A man desiring to take land might say, "I see you reserve game and rabbits, but land so burdened doesn't suit me, and I won't take it: you have a keeper there." It might be well to recollect that a reservation of game did not necessarily give the right of sending keepers over the land, or raising an excessive stock of game on it. If a farmer took land upon an express condition, which might be even ruinous to himself, with his eyes open, it was his own fault, and he ought not to complain. Some said that a farmer should not be allowed to make such an agreement; that he should be deprived of the power of damaging himself, but farmers generally knew how to take care of themselves. The farmers had no right, as a body, to tie the hands of the landlords, and he hoped it would be a long time before the legislature interfered between man and man. It was true that there was another point of view. They had been considering the matter chiefly from the farmer's side. Looking at what a landlord ought to do or ought not to do—he ought not to use his power to the prejudice of the tenant living on the land; but this was a duty which, however binding on the conscience or right feeling of the landlord, could not be insisted on by others, or made the subject of legislative enactment. Mr. Drutt further observed that one inducement for a man to invest his capital in land was to obtain influence, power, and pleasure; and if they diminished the inclination to purchase land, its value would decline, and the land of the country would become divided, to the great injury of agriculture. He would not advocate the preservation of game and rabbits, he would leave it to a man's sense of propriety and prudence as to what bargain he should make with his landlord; and he believed that farmers, as a rule, were quite able to take care of themselves. He would like, however, to have some alterations made in the law. He would leave every landlord and tenant to make their own bargain respecting the game, but he would like that whenever a man kept a large stock of game or rabbits, to the hurt of his neighbour, he should be liable for the damage. The value of land for game should be subject to poor rates. Every person charged with poaching should have his option, as well as if accused of any other theft, of being tried by a jury. It should not be left to game preservers or their friends or neighbours, but the same choice should be given to poachers as was given to other thieves. At the same time, it was but fair to say, in vindication of the much ridiculed justices, that since the law by which petty thieves had

the option of being tried either by justices or by a jury, only one or two in that district had elected to be tried by a jury, showing, on the part of the accused, a confidence in the justices, who, as owners of property, were not more likely to sympathise with thieves than game preservers with poachers.

Mr. WATERFIELD replied, and the following resolution was agreed to :

"That the rabbits ought always to be the property of the occupier, and that he should be allowed to couse the hares, and that the law should afford a remedy for injury to crops occasioned by game or rabbits preserved by any neighbouring owner."

A vote of thanks having been accorded to Mr. Waterfield the meeting separated.

THE AGRICULTURAL SOCIETY OF FRANCE.

We have been favoured with a copy of the discourse addressed to the members of this Society at their general meeting, on the occasion of the opening of the second annual session by the president, M. Douyn de Lhuys. A month after their first meeting, the council organised a series of provincial congresses, and forthwith a sort of tour of France was commenced.

"In March last the Agricultural Club of Arras invited and received the delegates of the society with the greatest cordiality. Thus, in the midst of a large number of the principal cultivators of the north, a series of most interesting discussions were carried on, upon artificial manures. A little later other districts summoned them. A congress was assembled at Lyons, under the auspices of the society, and during four days' meeting from 500 to 800 persons attended daily. Among these were delegates from the Chambers of Commerce of Turin and Florence, and many representatives from the agricultural societies of Switzerland. Among the questions discussed were agricultural credit, irrigation, the taxes which burden agriculture and land, manures, re-planting woods, agricultural education, the octroi duties, viticulture, and above all the question of the silk-worm, a subject of exceptional importance for the future of the south of France.

"Two months were past, and in the east of France the members stimulated another great meeting at Nancy, which lasted three days. Exhaustive cultivation, the sugar industry, forests, the employment of salt in agriculture, the utilisation of the sewage waters, and agricultural instruction gave rise to serious debates and important resolutions. The proximity of Germany inspired the thought of inviting the agricultural associations across the Rhine to take part in the congress. The appeal was responded to by the presence of intelligent farmers from Prussia, Austria, Bavaria, Wurtemberg, Baden, and Saxony, and valuable information was received as to the model farms of Germany. A distinguished member of this society has established at Nancy, on this model, the first of the kind in France, and the Departement of the Maritime Alps is about to follow the example.

"Viticulture has also had its congress properly organised and carried out. Not only Burgundy, but Champagne, Bordeaux, Charente, Auvergne, the departements of the South, and especially Hérault sent representatives to Beane in the commencement of November; even an Englishman took part in this discussion, not as a producer, but as an intelligent consumer and zealous defender of the free trade in wines for his country. The numerous questions which affected the production of wine were discussed, particularly the octroi and customs duties, and the new disease of the vine. The interesting details given by Messrs. Gaston, Bazille, Vialla, and Planchon on the life and habits of the insect depredator to which this calamity is attributed, were listened to with earnest attention. These detailed labours were the result of a commission appointed by the society to study on the spot the ravages of this scourge. Since then curious information has been received from the Cape Colony and southern Prussia as to this new disease.

"The agricultural conferences held at Angers, and the great congresses of Aix, Beauvais, and Chartres, held under the auspices of the Society, must not be passed by in silence, and many medals have also been granted. Notwithstanding the present limited resources of the society, the study of the important question of fertilisers has been encouraged by the offer of a prize to be given this session. While the society has been thus working in France, the principal agricultural societies of foreign countries have given warm expressions of their sympathy. England invited them to the Manchester meeting of the Royal Agricultural Society, and Germany to that at Trèves.

The sovereigns and princes, seeing in the development of agricultural progress a pledge of universal prosperity and friendship, have given in their alliance. In one year there have been inscribed as members of the society King George of Hanover, the Prince of Wales, the Khédive and his minister Nubar Pasha, the reigning Prince of Roumania, and General Baez, President of the Dominican republic.

"The Agricultural Union of Rhenish Prussia is associated with us as honorary, the Royal Agricultural Society of England has admitted many of our members, and the Minister of Agriculture of Austria has become our colleague. I should never finish my address if I were to enumerate all the legions, home and foreign, who, while preserving their own banners, yet enter upon and unite with us in this peaceful crusade. Finally, our statutes have been approved by Government and our society legalized."

THE PARIS FAT STOCK SHOW.—Four prizes of honour at the great French general fat stock show held in Paris during the last few days were awarded as follows: A crossed Durham beast (white), 43 months old, and weighing nearly 21 cwt., exhibited by M. Boutton-Lévéque, of the Ponts-de-Cé (Maine-et-Loire); a Durham-Charolaise cow (red-and-white), 44 months old, and weighing 20 cwt., exhibited by M. Signoret, of Sermoise (Nièvre); a lot of three Southdown sheep, 23 months old, and weighing 5 cwt., exhibited by the Comte de Bouillé, of Villars (Nièvre); and a pig of English breed, 10 months old, and weighing 9½ cwt., fattened by M. Chaminade, of Sarliac (Dordogne). The show seems to have been highly successful.

THE EAST LOTHIAN AGRICULTURAL SOCIETY'S SPRING SEED SHOW.—280 quarters in all were exhibited, the quality of which was excellent, particularly of barley, the samples of this grain being very superior. The judges—Messrs. Henderson, Byres, Skirling, Luffness Mains; and Hogarth, Gimmers Mills—gave the following awards: 10 quarters of best chevalier barley: premium, Mr. Brach, Duncanlaw; commended, Mr. Wyllie, Bolton. 10 quarters of best barley, of any other approved variety: premium, Mr. Wilson, Sheriffside (Potter's barley); commended, Marquis of Tweeddale. 10 quarters of best potato oats: premium, Mr. Clark, Oldhamstoch Mains; commended, Mr. Wilson, Sheriffside. 10 quarters of best Hopetoun oats: premium, Mr. Ronghead, Myreside; commended, Mr. Howden, Boggs. 10 quarters of best sandy oats: premium Mr. A. J. Balfour, Whittinghame; commended, Mr. Brodie, Littlepot. 10 quarters of best oats, of any other approved variety: premium, Mr. Paterson, Ewingstone (for early Angus); commended, Mr. Ronghead, Myreside (for Longfellow). 10 quarters of best Scotch field beans: premium, Mr. Hope, Fentonbarns; commended, Mr. Inch, Tynefield. 10 quarters of best beans, of any other approved variety: premium, Mr. A. J. Balfour.

THE TREASURERSHIP OF THE TEMPLE.—Mr. Hall Dare, late Secretary to the Royal Agricultural Society of England, has been elected Under-Treasurer to the Hon. Society of the Inner Temple. It is noticeable that within the last year or so Mr. Charles Shaw, Secretary of the Royal Agricultural Benevolent Institution, was elected Under-Secretary of the Middle Temple; the rule now being that barristers shall not hold such appointments.

CHEESE MAKING IN AMERICA.

At the Dairymen's Convention, Utica, Mr. WEBB read the following paper on "Dairy Products as seen from a Mercantile point of view:" The season of 1868-69 wound up with stocks of cheese more completely exhausted than was ever known, both in this country and in Great Britain. There was a very eager demand for new cheese, and tempting prices were offered to induce early deliveries. The first shipments from this side did not meet with much favour; many of the dairies very badly skimmed, and none showed richness of quality. Still the scarcity was so great that even those were sold at full prices, but they gave neither profit nor satisfaction to those who handled them. Your May make of cheese was unusually fine, and found eager buyers, but at such high prices, as to involve a loss to all concerned. Your June make was not nearly so good as that of May, its great defect being limpness or weakness of curd and want of solidity. These cheeses did not stand the passage across the Atlantic at all well. Many dairies that appeared solid and fine were inspected in New York before shipment, showed great looseness and weakness when they arrived at their destination. In fact, I never remember the cheese changing their character on the Atlantic passage to the same extent, as did the make of last June. Perhaps this is partly to be accounted for by the fact, that owing to the keenness of the English demand, prices were extremes, and shippers were willing to take a great deal of green and half-cured cheese. Dairymen, therefore, had every inducement to produce an article which should soon be ripe and ready enough to pass muster in the New York market, without reference to its fitness to stand the test of shipment. Your July make of cheese was also much complained of on the same grounds, of looseness and want of solidity, but the flavour of both the June and July cheese was purer and sweeter than it had been for the previous three years. It was also rich and full of quality. This purity of flavour helped in some degree to atone for the want of solidity, and altogether the quality was much to be preferred to the hot, rank flavour of the July make of 1868, which so greatly disgusted English consumers, and inflicted such heavy losses on shippers. The August, September, and some of the early October cheese, was really fine. It was pure and true in flavour, much more solid and close than the two previous months' make, and of finer curd and texture than any former season. Of the later made cheese, where the milk was not skimmed, and where proper attention was paid to the temperature of the cheese-room, some dairies turned out quality equal to the best of the whole season; but even at its best, this sort is not very desirable for shipment. It does not stand the deteriorating influence of the English climate nearly so well as the early make. To sum up, I should say that the whole season's make shows a decided improvement in the average quality and a larger proportion of really choice cheese than in any former year. I have already said that the price of American cheese rated very high at the opening of the season. There was an eager competition among English dealers for the earliest arrivals. Prices were consequently forced up beyond their legitimate level, and in the reaction that inevitably followed were correspondingly depressed. The excellent quality of your May makes somewhat checked the downward tendency, but when the poor June cheese reached the market, values fell rapidly, and for two months the trade was most unprofitable for all concerned in the buying and shipping of your product. At last the price touched a point that brought on a large consumption of American cheese. The heavy shipments of June and July makes were cleared off almost as soon as landed, which gave this season's hot weather cheese that quick sale they so imperatively required, preventing the usual accumulation of ill-flavoured, badly keeping stocks that in former seasons has been kept hanging over the market for several months. As soon as the English dealers had a taste of the fancy quality of your August and September make—cheese that could be handled, if needful held, with perfect safety—they bought freely, and prices advanced instead of declining as usual in September. It scarcely falls within my province to

speak of the home cheese trade, as there are so many here who can do so with much greater authority than I can; but I think it will be generally conceded that the consumption of cheese in this country is steadily increasing, and in the South very largely so. Indeed the smart rise of price in October was mainly caused by the unusually active domestic demand, for the heavy decline in gold, at that time, put a serious check on the operations of shippers. This activity of the home trade slackened very considerably during the month of November, and the price of cheese has since drooped in sympathy with the rapid fall in the premium of gold. In the English market during the months of November and December prices gave way slightly on medium sorts of American cheese, but the rate for really choice quality has been steadily maintained, the stock being light and very firmly held. Shipments during those two months were moderate, for the reason that the decline in gold was heavier than the decline in cheese, so that the sterling cost of the latter was enhanced in spite of the dull market on both sides of the Atlantic. We will now take a survey of the passing English cheese season, for the position occupied by your chief and indeed only competitors, the English dairymen, cannot be a matter of indifference to you. An unusually mild and wet winter was followed by an early spring. In Somersetshire and other southern counties, the cows were turned out a month earlier than usual; but scarcely were they on the grass when the weather changed. Through April, May, and half of June, there was a full average make in all the cheese-producing districts of England, but the quality was not so fine or the flavour so good as in former years. This is attributable to a cold, damp season, very unfavourable to the production of fine, or to the proper maturing of any sort of cheese. During the latter half of June and all through July, the weather was fine and clear, with a full summer temperature. The heat was in fact, at times excessive, and coming on the unprotected roots of the grass, just as the hay crop was removed, combined with an almost total absence of rain for some weeks, resulted in a very serious failure of the after-grass, and a great scarcity of food for the cows for the time. As a consequence, the make fell off about one-third in quantity, but showed a great improvement in quality and flavour. Early in August came the long-looked for rains, soon restoring the feed in the pastures, and up to the end of October there was a fair, but not excessive, make of average quality. In the beginning of November, a few sharp frosts tended to put an early stop to English cheese-making. In the districts around London, and some other large towns, the foot-and-mouth disease has been very prevalent among the cows. Coming at the fall of the year, this has necessitated the drawing of the daily supplies of milk for those cities from the nearest cheese-making districts, and has to some extent curtailed the make of late cheese. By the end of last March, the stocks of English cheese were more closely cleared out of dealers' hands than was ever before known at that date. Prices for the first deliveries of new cheese were very high, in spite of which, the demand all over the country has been unprecedentedly large the season through, and the best qualities have ruled much dearer in proportion than American. The price of the very finest sorts of English cheese has varied very little since the opening of the season. In the months of August and September, the arrivals of Dutch and American cheese were very heavy, and, as we have seen, went rapidly into consumption. But lower qualities of the home (English) make began to accumulate, but in no part of the country so rapidly as in Cheshire and the adjoining county of Shropshire, where a good deal of the so-called Cheshire cheese is made. But makers of those secondary and inferior qualities held for full prices: therefore, when compelled to sell they had quite an accumulation on hand, and were forced to accept such lower rates than they might have obtained had they freely met the market. At every September fair and market in the Cheshire district there was a large pitch of medium and low quality cheese, which was sold at from 48s. to 60s. These sorts, being lower than even the commonest kind of

American cheese, attracted the attention of dealers, and for a month or six weeks, in October and November, engrossed a large share of the consumption. The bulk of it has now been disposed of, and for what remains, greatly increased prices are asked. These facts seem to me to convey at once a warning and an encouragement to you, the cheese-makers of America. This county of Cheshire, which for very many years boasted, and boasted truly, of making the finest cheese in the world, has now become notorious for the badness of the quality and flavour of the bulk of its make, and for an absolute scarcity of really choice dairies. It is true the cattle plague fell upon this county, with its most desolating force, but that trouble has now been got over. The cows have all been replaced, and I fear this deterioration in the quality of Cheshire's staple productions, must be attributed, rather to the carelessness of her cheese makers, and to their want of system and application, than to any local or temporary cause. A most competent authority writes me as follows: "For all the other districts of England, including Somerset, Wilts, Derby, Leicester, and the smaller cheese-making counties, I do not find any one knowing anything about the business, who can say, that the dairy farmers are making *any* progress toward improvement." The conviction of some of the best judges of these matters, appears to be, that the energy, intelligence, and perseverance, which has been combined with and partly grown out of your factory system of cheese-making, is fast putting you in a position to completely distance the English dairyman in the production of *fine* cheese in *large* quantities, and unless the cheese-makers of the old country speedily rouse themselves to the emergency, applying to this business a like spirit of inquiry, and a like determination to excel, they must very soon surrender the foremost position on their own markets to their American competitors and content themselves if they can with the second place. The speaker then proceeded to sketch the position of other cheese-producing countries. The cheese of Canada is improving yearly in flavour and quality, and is coming to be much sought after by both Lancaster and Liverpool dealers. The season for Dutch cheese opened, as for all other sorts, with a bare market and full prices. The weather in Holland throughout the season was favourable for dairy products, but producers showed a disposition to realize their stocks as soon as ready. The particular size and shape of Dutch cheese limits their use to certain districts, and they can never become a formidable competitor of our article. Scotland is said to be increasing her production of cheese, as well as improving its quality. Sweden sends little or no cheese to the English market. I will give the receipts of cheese in New York city for three seasons: May 1st, 1867 to May 1st 1868, they were in round numbers 1,330,000 boxes; the following year, that is from May 1st, 1868, to May 1st, 1869, they only reached a total of 1,070,000 boxes, a falling off of 259,000, or twenty per cent in the number of boxes alone. Our receipts of cheese in New York city for the current season, that is from the 1st of May last to first day of the present year, were about 1,292,000 boxes. The receipts from now to the 1st of May next, which completes the year, will, I think, bring the total of 1869-70 fully up to the heavy one of 1867-68 which so frightened some of your members. It is true that the cheese do not now average so much in weight as they did that year, but against this I offset the largely increased quantity that has this season gone to Chicago, Cincinnati and other cities direct from the western part of this State. From their figures we can fairly infer a largely increased make over last season. Now let us see how the consumption has kept pace with this large production. Our stock of cheese in New York city Jan. 1, 1870, was liberally estimated at about 30,000 or 40,000 boxes in excess of that held at same date last year, while the receipts to that date showed an excess of about 250,000 boxes over the previous year. This gives us since the 1st of last May an increased consumption of 210,000 or 220,000 boxes, of which Great Britain took about 150,000 boxes. Looking at the total shipments since May 1st, and taking into account the stocks in London and Liverpool and the quantity in transit for these markets on the 1st of January for the last three years, I arrive at the conclusion that the consumption of American cheese in Great Britain has for this season been 140,000 boxes, or 20 per cent. in excess of what it was last season to same date and nearly 100,000 boxes, or at 17½ per cent. more than what it was in the corresponding period of the year before that, namely, 1867-68. Now comes the inquiry, what effect has

this increased make and consumption had upon the price of cheese. The quotations in New York city for choicest dairies on January 1st, for the past three years, are as follows: 1868, 15c. currency, with gold at 134½; 1869, 19½c., with gold at 133½, and 1870, 17½c., with gold at 120½. So that equalizing the gold basis, the price this year is equal to that of last year, and is four cents per pound, in currency, higher than it was January 1st 1868. If these figures have any value, they are ample warrant for my opening a statement as to the increased make, consumption and price of American cheese. Last year was an exceptional one. The make of cheese being everywhere short, prices of course ruled high, but still not so high by an average of 2s. 6d. per cwt., or ¼c. per pound in gold, as they have this season with a heavy production in all the cheese-making countries of the world. In fact, the high range of prices is a striking proof of the extent of the consumption, as, with only an ordinary one of cheese in England and this country, the market must have completely broken down and a very low average value prevailed. It becomes, then, a matter of general interest for us to ascertain, if possible, the causes of this increased consumption. The moderate price of bread in the old country, leaving the working classes a much larger surplus of their wages to spend in other articles of food, has, no doubt, had a good deal to do with it; but other and more potent causes have been, I think, 1st, the great improvement in the average quality of American cheese; 2nd, The sound judgment you dairymen have shown in judiciously meeting the English demands by few sales all the summer and thus retaining your hold on that market. One or two little matters of detail connected with your manufacture now claim our attention. Such of your dairies as have used Nicholl's English fluid annato have produced exactly that shade of light, lively colour which is so popular in London. I can, therefore, recommend the use of the article with great confidence, and the decline in gold should reduce its cost very materially. The boxes from some counties in the Western part of this State, and also from Lewis county are in many cases made from poor, thin, brittle stuff. The sides frequently give out before they reach their destined market, and great damage to the cheese results. Besides the improvement in make, quality, and price, I think you are to be congratulated on the improved opportunities you have of getting information about the state of the market, and therefore of forming an opinion on the probable course of prices. Among the chief of these are the Atlantic cables, those delicate nerves, which connect the brain of the old with the brain of the new world; you can now see the dairy quotations of the English markets just as well as any dealer or shipper; you have another enormous advantage in the increasing diligence and correctness with which the public press caters for your information; not only are the reports of the great New York papers got up with scrupulous care so as to represent the aggregate feeling of the market rather than individual opinion, but your local press, particularly that portion of it which makes a speciality of cheese reporting, has during the past year displayed an eclectic spirit worthy of all commendation. And now what is the conclusion of the whole matter? Chiefly, I think, that you need never to be afraid of making too much fine cheese. This year, with the largest shipments to England ever known, we have the highest average price. A very short time ago one of the largest dealers in the old country assured me that in the course of forty years' experience, he has never been burdened with more fine cheese than he knew where to sell at good prices. Of course, as the gold premium declines, the currency value of your product must more or less sympathise with it, but in the general shrinkage of values rendered inevitable by the improving financial condition of the country your interest appears to me to be one of those that will suffer least. There is every prospect that by the first of May next, stocks of American cheese will everywhere be closely used up, and we shall enter on the new season with a good demand at remunerative prices to the producer. I have done my best to make clear the promising future that lies open before you. If you would insure success in that future you must continue to *deserve* it. What you *have* gained must move you to redoubled effort and not serve as an excuse for relaxation; only in this way can you maintain the position you have so far reached. Only in this way can you hope to advance your product to the first place in the English market; and when that crowning point has at last been achieved, sleepless vigilance alone can insure you in its permanent occupation.

THE FARNLEY SHORTHORN SALE.

A Selection of Stock bred by Mr. F. H. Fawkes.

By MR. H. STRAFFORD, ON THURSDAY, FEBRUARY 24TH.

COWS AND HEIFERS.

Magnolia, red, calved December 11, 1861, by Royal Oak (18873), out of Magenta by Don Giovanni (18893); Magnolia has bred 6 calves, the last October 5th, 1869.—Mr. Blackwell, 19 gs.

Valerian, white, calved October 10, 1862, by Royal Oak (18873), out of Vanilla by Robinson Crusoe (18610); has had 4 calves, the last September 24th, 1869.—Mr. Danby, 23 gs.

Lady Wallace, white, calved July 5, 1863, by Lord Cobham (20164), out of Wild Rose by Sir Walter Scott (18753); has had 7 calves, the last March 11th, 1869.—Mr. Cadman, 35 gs.

Blue Cap, red, calved November 29, 1863, by Royal Oak (18873), out of Blue Bonnet by Lord Clarendon (14807); has had 3 calves, the last April 20th, 1869.—Mr. Blackwell, 51 gs.

Her Ladyship, roan, calved June 2, 1864, by Lord Cobham (20164), out of Ship-a-Hoy by Sir Edmund Lyons (15284); has had 3 calves, the last April 5th, 1869.—Mr. Yorke, 32 gs.

Friar's Balsam, roan, calved August 15, 1865, by Lord Cobham (20164), out of Fatima by Inkermann (13068); has had 2 calves, the last May 19th, 1869.—Mr. Blackwell, 31 gs.

Violet, roan, calved January 10, 1866, by Bon Homme (21300), out of Lady Viola by Lord Cobham (20164); has had 1 calf, February 4th, 1869.—Mr. Marshall, 33 gs.

Lady Leoine, roan, calved January 17, 1866, by Lord Cobham (20164), out of Lioness by Sir Edmund Lyons (15284); has had 2 calves, the last November 22nd, 1869.—Mr. Blackwell, 34 gs.

Lady Betty, roan, calved May 1, 1866, by Lord Cobham (20164), out of La Bonne by General Bosquet (14591); has had 1 calf, May 22nd, 1869.—Mr. Brown, 48 gs.

Lady Margery, roan, calved October 5, 1866, by Lord Cobham (20164), out of Magnolia by Royal Oak (18873); has had 1 calf, August 24th, 1869.—Mr. Lamb, 23 gs.

What Next, roan, calved May 23, 1867, by Reformer (18687), out of Lady Wallace by Lord Cobham (20164); has had 1 calf, November 25th, 1869.—Mr. Brown, 31 gs.

Reaction, roan, calved August 26, 1867, by Reformer (18687), out of Valerian by Royal Oak (18873).—Mr. Swarbrick, 30 gs.

Friar's Balm, red, calved May 18, 1868, by Reformer (18687), out of Friar's Balsam by Lord Cobham (20164).—Mr. Danby, 16 gs.

Valentine Bacon, roan, calved May 21, 1868, by Friar Bacon (21780), out of Lady Valentine by Lord Cobham (20164).—Mr. Danby 28 gs.

Maggie, roan, calved September 8, 1868, by Reformer (18687), out of Lady Maggie by Lord Cobham (20164).—Mr. Ramsden, 21 gs.

Reform, roan, calved September 16, 1868, by Reformer (18687), out of Valerian by Royal Oak (18873).—Mr. Ganett, 18 gs.

Beatrice Bacon, roan, calved December 14, 1868, by Friar Bacon (21780), out of Lady Beatrice by Lord Cobham (20164).—Mr. Darley, 35 gs.

Wild Rose, roan, calved March 11, 1869, by Reformer (18687), out of Lady Wallace by Lord Cobham (20164).—Mr. Yorke, 22 gs.

Fairy Tale, roan, calved March 21, 1869, by Reformer (18687), out of Lady Fairy by Lord Cobham (20164).—Rev. T. Staniforth, 20 gs.

BULLS.

Lucky Boy, roan, calved March 14, 1868, by Lord Cobham (20164), out of La Belle by Royal Oak (18873).—Mr. Graves, 55 gs.

Lord Montjoy, roan, calved November 7, 1868, by Lord Cobham (20164), out of Magnolia by Royal Oak (18873).—Mr. Kaye, 27 gs.

Lord Lyons, roan, calved April 30, 1868, by Lord Cobham (20164), out of Lioness by Sir Edmund Lyons (15284).—Mr. Metcalf, 61 gs.

Leopold, white, calved November 30, 1868, by Friar Bacon (21780), out of Lady Leoine by Lord Cobham (20164).—Mr. Day, 25 gs.

Lord Leopold, roan, calved March 8, 1869, by Lord Cobham (20164), out of Lioness by Sir Edmund Lyons (15284).—Mr. Tyndall, 42 gs.

Lord Bloomfield, roan, calved April 20, 1869, by Lord Cobham (20164), out of Blue Cap by Royal Oak (18873).—Sir M. Ridley, 65 gs.

Lord Bolton, roan, calved April 30, 1869, by Lord Cobham (20164), out of La Bonne by General Bosquet (14591).—Mr. Thompson, 30 gs.

First Lord, red, calved November 16, 1869, by Lord Darlington (26633), out of La Brilliant by Reformer (18687).—Mr. Legard, 10 gs.

Third Lord, red, calved November 25, 1869, by Lord Darlington (26633), out of What Next by Reformer (18687).—Mr. Darley, 27 gs.

Fourth Lord, red, calved December 9, 1869, by Lord Darlington (26633), out of Lady Maggie by Lord Cobham (20164).—Mr. Yorke, 17 gs.

SUMMARY.

	Average.	Total.
19 Cows.....	£30 7 10.....	£577 10 0
10 Bulls	37 13 11.....	376 19 0
		£954 9 0
29 Averaged	£32 18 3	

BEAUMONT GRANGE SHORTHORN SALE.

A Selection of Stock, from Mr. W. W. Slye's Herd.

By MR. H. STRAFFORD, ON FRIDAY, FEBRUARY 25TH.

COWS AND HEIFERS.

Nell Gwynne, red, calved December 20, 1859, by Rex (16833), out of Sophy Grange by Young Benedict (15641).—Mr. Foster, 27 gs.

Strawberry, roan, calved March 21, 1864, by Grand Duke of Lancaster (19883), out of Surprise by Royal Duke (16865).—Mr. Moore, 31 gs.

Selina 5th, rich roan, calved April 10, 1864, by Grand Duke of Lancaster (19883), out of Selina 3rd by Garibaldi (17933).—Mr. Dunmore, 41 gs.

Lady Stamford, red and white, calved April 30, 1864, by Oxford (20450), out of Royal Crescent by Royal Duke (16865).—Mr. Dunmore, 28 gs.

Moss Rose 4th, rich roan, calved February 5, 1865, by Royal Gwynne (22784), out of Moss Rose by Lord of Brawith (10465).—Mr. R. Jefferson, 40 gs.

Cherryripe, red, calved April 2, 1865, by Royal Gwynne (22784), out of Surprise by Royal Duke (16865).—Mr. Parker, 26 gs.

Lancaster Gwynne, rich roan, calved April 11, 1865, by Grand Duke of Lancaster (19883), out of Nell Gwynne by Rex (16833).—Mr. Moore, 46 gs.

Hawthorn, white, calved February 25, 1866, by Grand Duke of Lancaster (19883), out of Hopeful by Garibaldi (17933).—Mr. Taylor, 50 gs.

Royal Charmer 2nd, red roan, calved January 21, 1866, by Grand Duke of Lancaster (19883), out of Royal Charmer by 2nd Duke of Cambridge (12743).—Mr. T. Higby, 38 gs.

Countess 7th, red, calved April 26, 1866, by Grand Duke of Lancaster (19883), out of Countess by Young Pompey (13480).—Capt. Gauday, 21 gs.

Sweetheart 3rd, rich roan, calved October 28, 1866, by Sir Walter Gwynne (22921), out of Sweetheart 2nd by Grand Duke of Lancaster (19883).—Mr. Foster, 80 gs.

Fawley Duchess, rich roan, calved March 10, 1869, by Grand Duke of Lancaster (19883), out of Lady Knightley by Oxford (20450).—Mr. Foster, 105 gs.

Selina 10th, red, calved June 7, 1861, by Grand Duke of Ox-

ford (24070), out of Selina 5th by Grand Duke of Lancaster (1883).—Mr. Parker, 19 gs.

Cherry Duchess, rich roan, calved July 18, 1869, by Grand Duke of Lancaster (1883), out of Cherryripe by Royal Gwynne (22784).—Mr. Parker, 18 gs.

Lady Thorndale Bates 2nd, rich roan, calved Oct. 26, 1869, by 4th Duke of Thorndale (17750), out of Lady Bates 3rd by the Duke of Oxford (11387).—Mr. Danmore, 300 gs.

BULLS.

Royal Count, red, calved April 23, 1868, by Sir Walter Gwynne (22921), out of Countess 7th by Grand Duke of Lancaster (1883).—Mr. Haslam, 24 gs.

Cherry Duke, red, calved June 14, 1868, by Grand Duke of Lancaster (1883), out of Cherryripe by Royal Gwynne (22784).—Mr. Hock, 30 gs.

Farsley Duke, rich roan, calved September 14, 1868, by Grand Duke of Lancaster (1883), out of Moss Rose 5th by Royal Gwynne (22784).—Mr. Parker, 45 gs.

Sir Rainald, rich roan, calved September 18, 1868, by Sir Walter Gwynne (22921), out of Grand Duchess of Fawley by Grand Duke of Lancaster (1883).—Mr. Haslam, 30 gs.

Grand Duke of Farnley, rich roan, calved November 27, 1868, by Grand Duke of Lancaster (1883), out of Miss Rose 2nd by Oxford (20450).—Not sold, 100 gs. reserve.

Charmers Grand Duke, red, calved February 25, 1869, by Grand Duke of Lancaster (1883), out of Royal Charmer by 2nd Duke of Cambridge (12743).—Mr. Ray, 28 gs.

Grand Duke of Cambridge 3rd, red, calved March 1, 1869, by Grand Duke of Lancaster (1883), out of Cambridge Moss Rose by 2nd Duke of Cambridge (12743).—Mr. Guico, 50 gs.

Lord Barrington Spencer, rich roan, calved August 3, 1869, by Barrington Oxford (25607), out of Lady Spencer 2nd by Grand Duke of Lancaster (1883).—Mr. Sanders, 30 gs.

The Cardinal, rich roan, calved August 15, 1869, by Barrington Oxford (25607), out of Sweetheart by Grand Duke of Lancaster (1883).—Mr. Biddle, 26 gs.

Lord Barleigh 2nd, red, calved August 30, 1869, by Grand Duke of Lancaster (1883), out of Lady Stamford by Oxford (20450).—Mr. Thorn, 15 gs.

Grand Duke of Oxford 2nd, rich roan, calved October 3, 1869, by Grand Duke of Lancaster (1883), out of Oxford Gwynne by Oxford (20450).—Mr. Smith, 24 gs.

The Roan Duke, rich roan, calved October 6, 1869, by Grand Duke of Lancaster (1883), out of Red Duchess 6th by Oxford (20450).—Mr. Sayer, 15 gs.

Grand Duke of Farnley 2nd, rich roan, calved Nov. 13, 1869, by Grand Duke of Lancaster (1883), out of Moss Rose 2nd by Oxford (20450).—Mr. Tindal, 25 gs.

Cherry Grand Duke, rich roan, calved December 5, 1869, by Grand Duke of Oxford (24070), out of Strawberry by Grand Duke of Lancaster (1883).—Mr. Lethbridge, 36 gs.

Grand Duke of Fawley, rich roan, calved January 24, 1870, by Barrington Oxford (25607), out of Grand Duchess of Fawley by Grand Duke of Lancaster (1883).—Mr. Gibbon, 25 gs.

SUMMARY.

	Average.	Total.
15 Cows.....	£60 18 0	£913 10 0
15 Bulls	29 6 7	439 19 0
		£1353 9 0

30 Averaged £45 2 3

It will be seen that the great feature of the occasion was the sale of Lady Thorndale Bates 2nd.

SALE OF MR. PRYCE BOWEN'S STOCK AT SHRAWARDINE.

—The sale of the farming stock of the late Mr. Pryce Bowen, of Shrawardine Castle, drew together a large attendance. The sale commenced with the Shropshire ewes. The first lot consisted of five animals, in lamb, which were purchased by Mr. Richards, of Llynclys, at 27 per head. The highest bid for this class of stock was that of Mr. Wainman, of Workop, Notts, who gave £65 for a pen of five. The whole of this lot were by Lord Clifden. In about two dozen of the pens the ewes realised from £4 10s. to £7 2s. a-piece, and the remainder averaged about £3 10s. The shearing rams, 24 in number, were sold in pairs, and excited some very spirited competition. The most valuable pair was bought by Mr. Williams, of Leighton, for £30, who also purchased the second best pair for £28. The lowest price given in this class

was £9 per pair. The 170 stock ewes realised £868, or, on an average, £5 2s. each. The 70 shearing ewes brought in £172, or £2 10s. the average. The shearing rams sold for £264, giving an average of £6 10s., and 40 shearing wethers brought £288 15s., or an average of £2 5s. each. Of the whole flock, the average was £4 10s. per head. The sale of cattle commenced at half-past three, and the first lot disposed of were the Herefords. They comprised 62 animals of the purest breed, but notwithstanding this fact, the prices were by no means high. Mr. J. Hill, Felthampton, purchased one, Peeress, for 26 gs., and a pair of useful yearlings for 27½ gs. Milton, a bull that has carried off three prizes from the Royal, and several other Societies, was bought by Mr. A. Mansell, for 27 gs. The bull Master Halston, bred by Mr. Edmund Wright, Halston, was sold to Mr. Wild for 23 gs. Mercury became the property of Mr. Lloyd, Carregrofa, for 25 gs. Milford was purchased by Mr. Broughall for 21 gs. There were six other bulls sold, and their prices ranged from 10½ to 19 gs. Nine of the yearlings, and two year olds, sold cheap, 25 gs. being the highest price realised. The fat stock consisted a score, or so, of remarkably nice animals, which realised from 7½d. to 8d. per lb. Mr. Preece, of Shrewsbury, had the conduct of the sale.

SALE OF SCOTCH SHORTHORNS.—Mr. Milne, of Kinaldie, Aberdeenshire, has had his annual sale of young bulls and heifers. There was a large attendance, and the sale, all things considered, was moderately good. The average of the bulls was about £25 a-head. Of the fifteen heifers offered for sale, thirteen met with purchasers. They were better on the whole than the bulls, and brought good prices. The highest price at 40 gs. was bought by Mr. White, Clinterty. The following is the list of animals sold: *Bulls*.—Lochinvar, red, with white spots, calved 3rd Feb., 1868—Mr. Collie, Lairhill, Fintray, 26 gs. Victorius, red, with white spots, calved 31st July, 1868—Mr. Booth, Mastrich, Newhills, 20 gs. Prince Arthur, red, with white spots, calved 14th March, 1868—Mr. Campbell, Kinneff, 22 gs. Royal Duke, roan, calved 16th August, 1868—Earl of Caithness, 30 gs. Victor, red, calved 12th Jan., 1869—Mr. Scott, Peterborough, Canada, 28 gs. Forest Knight, red, calved 23rd Jan., 1869—Mr. Napier, Burnside, Newhall, 28 gs. Hotspur, roan, calved 11th Jan., 1869—Major Gordon Duff, of Drummur, 30 gs. Volunteer, white, calved 16th Feb., 1869—Mr. Dingwall, Blackmill, Tarland, 20 gs. Knight of Don, roan, calved 1st May, 1869—Mr. Lindsay, Whitelebury, Kinneff, 22 gs. Pilot, red and white, calved 15th April, 1869—Mr. Strachan, Charleston, Nigg, 14 gs. Red Chief, red, calved 2nd Aug., 1869—Mr. Shewan Newton, of Carsindae, Midmar, 19 gs. *Heifers*.—Lady Battersea, red, calved 20th Jan., 1869—Mr. Henderson, Kinclure, Towie, 30 gs. Clara XXVIII., red, calved 11th Jan., 1869—Mr. Lumsden, Braco, Keith, 29 gs. Beauty VI., red, calved 18th March, 1869—Mr. McDonald, The Farm, Huntly, 24 gs.—Queen of May, red, calved 25th Jan., 1869—Mr. Scott, Glendonach, Huntly, 23 gs. Rosie III., roan, calved 15th March, 1869—The Earl of Caithness, 20 gs. Spinster IV., roan, calved 30th March, 1869—Mr. Anderson, Daugh, Coldstone, 14 gs. Sybil XXIV., roan, calved 23rd March, 1869—Mr. Smyth, Tocher, Rayne, 14 gs. Goudspink III., red, calved 21st April, 1869—Mr. Henderson, Kinclure, 13 gs. Camilla IV., red and white, calved 1st June, 1869—Mr. Paterson, Cairnhill, Keithhall, 13 gs. Daisy XXV., roan, calved 20th May, 1869—Mr. Rennie, Wester Fintray, 11 gs. Magnet V., red, calved 3rd June, 1869—Mr. Longmore, Keith, 19 gs. White Spir, white, calved 2nd August 1869—Mr. Burness, Boghead, Kintore, 18 gs. Spicy VI., red and white, calved 15th June, 1869—Mr. Whyte, Clinterty, 40 gs.

SALE OF SHORTHORNS IN AMERICA.—Mr. Sheldon has lately sold to Messrs. Wolcott and Campbell, of New York Mills, near Utica, about half of his herd, some thirty-nine animals. They comprise: 3rd Duchess of Thorndale, 6th Duchess of Thorndale, 12th Duchess of Thorndale, 8th Duchess of Geneva, 6th Duchess of Geneva, 13th Duchess of Geneva, 7th Lady of Oxford, 10th Lady of Oxford, 2nd Maid of Oxford, Blooming Heather, Butterfly Belle, Moneta, Mazurka 9th, Lady Susan and some twenty-five others, among them the bull, Baron of Oxford, now in his fifteenth year. This embraced an average of old and young from among the entire herd, and then, oxen so, the figures were a trifle over an average of 2,000 dollars per head.

THE NEW FARM.

This frost hath enabled us to get through what the bailiff calls a "sight of work." Although authorities are agreed that upon the whole it is best to haul fold manure on the leys and pasture during autumn, inasmuch as thereby the food has time to soak down to and into the rootlets so that they are prepared to strike out vigorously with the first burst of spring, yet having our yards full we were tempted to go on top-dressing as long as the hard surface allowed us without trespass. Were we a green field ourselves our argument would be that good food could come never amiss, so upon that hint we acted, and can only hope that our wishes may be realised in the gathering in of a grand hay crop.

The lambs are falling fast, and as yet we have been very fortunate. The quiet dams look so comfortable in their pens with an infant alongside. We were hurried in our preparation at last, and so adopted a plan which we should adhere to again from its simplicity. With a hay-knife we cut into, or rather hollowed out, a recess around a straw rick, into which we set hurdles at right angles to the stack and about one-and-a-half yards apart. Upon the portion of the hurdles that ran under the straw we laid a tier of spare spruce boards: then some small gorse was pulled through the lower bars, and a long range of most comfortable pens was upon a ready, and that, too, in an astonishing short time.

We got our first crop of water-cresses last week. A mistake I made in planting the bed I may as well recount for the guidance of others. I laid a floor of rich mud for them. Instead of which I should have simply strewn gravel on sharp sand. The leaves run up too luxuriantly and lose their brown hue. The whole crop should, I am told, be lifted every spring and have their root points trimmed. But I shall be glad myself to obtain further information as to the proper cultivation of this wholesome and delicious salad. Our pool lying in a hollow, the water gets too hot by attraction of the sun rays, and makes them too soon a giant cress. I believe, from what I have seen tried, that a bunch of water-cress *does* act effectually as an antidote against the depressing effects of nicotine. Either the juice of the herb or the exercise of picking it out of the fresh water quickly removed my friend's headache. Another simple effect let me record. We all know that dry earth, as well as charcoal, has the power of deodorizing. I was, notwithstanding, I must confess, surprised at the immediate and thorough success which attended cook's throwing some bowlfuls of woodashes from the oven, after baking, down the scullery sink, which, do what we would, could never before be kept from emitting, especially in damp weather, an unpleasant odour which pervaded the whole house. They were careful never before to throw cabbage-water down. Still, do what they might, the bad smells continued. Since I desired her to throw down some ashes it has been altogether removed.

I have had much entertainment during the past week in directing a woodman to cut peeps and glimpses through the woods, which gives some exquisite little pictures of the distant landscape framed within the surrounding boughs, and which will be infinitely more effective when the foliage covers the trees again. A quantity of the superabundant young trees he has been thinning out to split into pales to fence around a rough piece of fern and bramble where the pheasants love to make their nests, and which at present is open to invasion by the pestilent curs of every passer by.

One I helped him to fall; and of course knowing better than he did, and pulling the rope somewhat differently to what he desired me, got well punished by seeing a pet straight young Scotch fir snap off in two like a carrot under the weighty head of the overthrown stick. A lesson for your obstinate conceit, Mr. Vigil!

A mixture of good and bad luck has attended the cow-sheds. One most valuable bull calf has been lost through the stupid attendant giving his dam a feed of frosted swedes. An obstinate diarrhoea took him off. On the other hand our good fortune with the ewes continues, which I attribute in a great degree to their having been very evenly kept during the last three months. It is the up and down feeding that plays the mischief with dam and offspring—now starvation, now abundance—the poor veins cannot stand such abuse. One farmer I knew lost the great part of his yearling sheep last year from this cause. Our best Guernseys have produced us fine heifer calves by a handsome young Shorthorn sire. So we must put the one thing against the other. Keep forging on against a head sea is the grand rule of agricultural life. The storm and current are sure to relax their violence in time.

We have had in the poultry-yard a singular illustration of the difficulty there is in breeding away the characteristics of any new cross one may adopt. Some years since we received some beautifully-marked bantams which had been imported from Lucknow. They themselves crossed a little with some Seabright fowls, but died at an early period, owing, I think, to the strange inclemency of the weather. We saved some half-bred chickens, which have since intermixed with the Seabrights, with the effect only of rendering the succeeding hatches as they grew up more dowdy-looking and leg-feathered. These enlarged hens were very useful for sitting on pheasant eggs, and had a certain wild liking for life in the woods. Last season, however, there got mated a pair of the first cross—that is, own brother and sister—and their produce has reverted to the Lucknow sort. The shape is similar, broad, rather low and lengthy with deep feather in the legs, and a peculiar colour of the plumage. White speckled with bluish red and black represents the imported pair almost exactly. How to go on now is the puzzle. There is, clearly, room for instructive experiment. An eminent Southdown breeder and Southdown judge, who some years since sold off his famous flock and has since been experimenting with a cross, told me that his theory was not the usual one of taking fresh blood through the ewes and then serving the produce with a pure-bred sheep again, but to pair the half-breds. I read the other day that he has managed to produce a beautifully-even flock of an improved and special sort. This history of our bantams would seem to endorse his plan. I shall watch and report further results, when we have tried a variety of combinations.

We have been transplanting ripstone-pippins and filbert-bushes into every wild corner on the hill. What a pull it is to live in a district where the elm, the oak, the chestnut, the apple, and the walnut are really native weeds springing up in every hedgerow and on every bank at random, one might say, and abundantly! I followed my young ones just now into old Melon's fruit-rooms. How they did pocket, the old fellow bursting with delight as he looked on! And then, when the crop is on the trees, how they eat all day long between

school-hours, and seem never the worse, dinner only being worse for it, as their appetites, to my sorrow, seem rather whetted than appeased!

It is no wonder that the vegetarian badger loves the district. There is such a fine fellow has his lair under a rock adjacent to this, close to which he has a raised seat, worn quite hollow on the top, like an ostrich's nest. The labourers call it his "Sunday seat." It commands a magnificent view of the surrounding country.

There has been hot work amongst the fox covers on the further side of the county, in consequence of which Mr. Reynard has migrated to our inaccessible strongholds.

You may hear him bark every evening about nightfall. One fox feasted last week on a guinea-fowl of ours, and winked his eye grandly at the traps all around, which I found the angry bailiff had soothed his wrath by setting. The red robber I love to see so stealthily slipping through the gorse, and am only vexed when, as I saw him the other day, he will keep whirling around his head, then tossing-up and catching and re-tossing an unhappy rabbit, neutralizing by his conduct any sympathy on my part which might have arisen from Mr. Freeman's attacks.

VIGIL.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL: Wednesday, March 2.—Present: the Duke of Devonshire, K.G., President, in the chair; the Earl of Lichfield, the Earl of Powis, Viscount Bridport, Lord Chesham, Lord Tredegar, Lord Vernon, Lord Walsingham, Sir Massey Lopes, Bart., M.P., Sir A. K. Macdonald, Bart., Sir H. Vane Bart., Sir Watkin Wynn, Bart., M.P., Mr. Barthropp, Mr. Cantrell, Colonel Chaloner, Mr. Olive, Mr. Davies, Mr. Dent, M.P., Mr. Druce, Mr. Edmunds, Mr. Brandreth Gibbs, Mr. Holland, Mr. Hornsby, Mr. Wren Hoskyns, M.P., Colonel Kingscote, M. P., Mr. Leeds, Mr. Milward, Mr. Pain, Mr. White Ridley, M.P., Mr. Statler, Mr. Torr, Mr. Wells, M.P., Mr. Whitehead, Major Wilson, Mr. Jacob Wilson, Professor Simonds and Dr. Voelcker.

The following new members were elected:—

Arnold, James, 35 and 36, West Smithfield, E.C.
 Bather, Thomas, Maesbury Hall Mill, Oswestry
 Bond, A., Huntstile, Bridgwater
 Brown, Benjamin, Thrusford, Thetford
 Case, James, Upton, Reading
 Castle, George, Sutton, Stanton Harcourt, Eynsham
 Cole, W., Douglas, Bicester
 Dickers, S. S., Golder Manor, Tetworth
 Dodd, F., Rush Court, Wallingford
 Ellershaw, Charles, Bossall, York
 Garratt, R. L., Thorpe, Malsor, Kettering
 Gillett, Charles, Lower Haddon, Faringdon
 Greenslade, John, Balham, Tiverton
 Hale, Bernard, Holly Hill, Hartfield
 Hammond, John, Bale, Thetford
 Harland, H. S., Malton, York
 Hamby, J. H., Ashley, Stockbridge
 Jones, John, Pike's End, Ellesmere
 King, J. Pittman, North Stoke, Wallingford
 Kirk, Charles, Sleaford, Lincoln
 Labalmondiera, George, 32, Craven Street, W.C.
 Lloyd, Robert, Offmore, Kidderminster
 Mace, Thomas, Sherborne, Northleach
 Newton, S. C., The Downs, Croxton, St. Neots
 Nicollis, W. H., Newnham, Shrewsbury
 Owen, C. N., Walton House, Oxford
 Paddison, Edward, Ingilby, Lincoln
 Parsons, Herbert, Elsfield, Oxford
 Parsons, John, Ilfley, Oxford
 Perkins, W. H., Westfield House, Amesby, Theddingworth, Rugby
 Rusher, W., High Street, Banbury
 Statter, John, New Brighton, Chester
 Toder, Edward, Little Carlton, Newark
 Topham, Thomas, The Twemlows, Whitchurch
 Taughan, G. L., Belmont Villa, Leicester
 Walker, James, Bushy Lodge, West Firie, Lewes
 Warden, T. S., Sedbergh, Kendal
 Willows, J. G., Rushton, Kettering

FINANCE.—Viscount Bridport (Chairman) presented the report, from which it appeared that the Secretary's receipts during the past month had been examined by the committee, and Messrs. Quilter, Ball, and Co., the Society's accountants, and were found correct. The balance in the hands of the bankers on February 28 was £1,724 0s. 8d. It was also reported that the committee had had under their consideration two cases of members in arrear with their subscriptions, namely, Mr. S. W. Rayne, of Newcastle-on-Tyne, and Mr. Joseph Chesworth, of Longslow, Market Drayton, and they recommended that these cases be referred to the Society's solicitors, with instructions to take the necessary legal proceedings to recover the arrears of subscriptions due to the Society. The committee recommended that a new valuation be made in the fixtures and furniture of the house, in consequence of recent changes made in the Society's property.—This report was adopted.

JOURNAL.—Mr. Dent, M.P., reported that an application had been made by the Editor of the "Geological Magazine" for the loan of the stone from which the geological map of Belgium, in the last number of the Journal, had been printed; and that the committee recommended that this application be granted on payment of the necessary expenses, with the proviso that due acknowledgment be made of the source whence the map was derived. This report having been adopted, and the committee having announced that the February number of the Journal had been published and delivered to members in the middle of the month, Lord Vernon expressed his regret that the article on cheese factories had not been published earlier, so as to have assisted the dairy farmers of Derbyshire by the information which it contains, in their endeavour to establish cheese factories in England.

FARM PRIZES.—The committee recommended that Mr. Keary, of Bridgnorth, Salop; Mr. Gibbons, of Burnfoot, Cumberland; Mr. Torr, of Aylesby, Lincolnshire, be appointed the judges to adjudicate on the prizes offered by Mr. Mason, late High Sheriff of Oxfordshire, and by the Society, for the two best managed farms in the district round Oxford, to compete for which 22 farms had been entered. It was also recommended that the first inspection should commence as soon as possible, and that Mr. Keary be requested to write the report of the Judges. This report was adopted.

CHEMICAL.—Mr. Wells, M.P. (Chairman), drew attention to the following analyses of bone manures, which had been submitted to the committee by the consulting chemist in his usual quarterly report:—

I. Composition of a sample of so-called bone manure, sent by Mr. S. Bacon, jun., Ratcliffe Culey, Atherstone.

Water	...	...	...	...	90.19
*Organic matter	...	...	...	...	21.61
†Mono-basic phosphate of lime	...	...	...	...	.74
Free sulphuric acid	...	...	...	...	3.78
Oxide of iron and alumina	...	...	...	...	.69
Sulphate of lime (gypsum)	...	...	...	...	47.67
Magnesia and alkaline salts	...	...	...	...	.78
Insoluble siliceous matter	...	...	...	...	4.54

100.00

*Containing nitrogen	...	...	...	...	1.11
Equal to ammonia	...	...	...	...	1.34
†Equal to bone-phosphate rendered soluble	...	...	...	...	1.17

It will be noticed that this example of so-called bone manure contained only 1 per cent. of phosphate of lime, and 1 per cent. of nitrogen. It contained 20 per cent. of water, and consisted mainly of gypsum and some cheap organic refuse, impregnated with sulphuric acid, and is not worth more 30s. to 35s. per ton as a manure.

Mr. Bacon informs me that he bought the manure from a Mr. Ralph Potts at £4 10s. per ton, and invoiced at £4, and that it was guaranteed to be bone manure, prepared by Mr. George Birch, manufacturer of all kinds of bone and special manures for every crop, Woodcock Street Works, No. 1, Henneage Street, Birmingham.

II. A second sample of bone-dust was sent for analysis by Mr. J. Borlase Tibbets, Barton Seagrave, Kettering, who bought it at £7 7s. from Messrs. Ellis and Everard, Leicester, as $\frac{1}{2}$ inch bones.

The following is the composition of this bone-dust:—

Moisture	...	...	...	...	9.94
*Organic matter	...	...	...	...	7.74
Tribasic phosphate of lime	...	...	...	...	40.19
Carbonate of lime	...	...	...	...	17.66
Oxide of iron and alumina, magnesia, &c.	...	...	...	...	6.35
Insoluble siliceous matter (sand)	...	...	...	...	18.23

100.00

*Containing nitrogen	...	...	...	...	.66
Equal to ammonia	...	...	...	...	.80

It will be noticed that these bones were very poor in nitrogenous organic matter, and contaminated with a good deal of carbonate of lime and fine sand. Their real value does not exceed £5 per ton.

III. The following is the analysis of another sample of bone-dust sent to me by Mr. E. D. Broughton, Wialaston Hall, Nantwich, who bought it from Messrs. Bradburn and Co., of Wednesfield, near Wolverhampton, through Mr. Thos. Wittingham, their agent at Nantwich, at £7 per ton:

Moisture	...	...	...	...	13.53
*Organic matter	...	...	...	...	22.03
Phosphate of lime	...	...	...	...	41.49
Sulphate of lime	...	...	...	...	13.75
Carbonate of lime	...	...	...	...	2.42
Alkaline salts and magnesia	...	...	...	...	3.47
Sand	...	...	...	...	3.32

100.00

*Containing nitrogen	...	...	...	...	2.71
Equal to ammonia	...	...	...	...	3.29

Genuine bone-dust contains about 48 per cent. of phosphate of lime, and yields about $\frac{1}{4}$ per cent. of ammonia, and no appreciable amount of sulphate of lime. Good bone-dust at present, I believe, cannot be bought for less than £8 8s. per ton. The bone-dust sent to me by Mr. Broughton was mixed with boiled bones, to which frequently sulphuric acid is added for the purpose of arresting decomposition.

The committee recommended that the foregoing reports

be published in the minutes of the Council meeting. They also recommended that the usual annual grants for experiments be awarded to Dr. Voelcker. This report was adopted.

VETERINARY.—Major-General Viscount Bridport (Chairman) reported that, in the opinion of the committee, the portion of the grant to the Royal Veterinary College (£50), which, by the resolutions of 1863, was to be appropriated for researches into the diseases of cattle, sheep, and pigs, has not hitherto been sufficiently set apart for that purpose. They therefore recommend that for the future the annual veterinary grant of £200 be divided under two heads: (1) That £150 shall be paid to the Royal Veterinary College for the general advancement of veterinary science in reference to cattle, sheep, and pigs, as heretofore; and (2) That £50 be retained under the control of the Council for the purpose of being applied to experiments on the diseases of cattle, sheep, and pigs. They further recommend, that in consideration of the general grant from the Society the Governors of the Royal Veterinary College shall undertake that the Professor of Cattle Pathology shall carry out such experiments at the College as the Council shall require, the cost not to exceed the above-named amount; that the result be communicated to the Council immediately on the conclusion of the experiments; and that a detailed account of the expenditure of the £50 shall be furnished each year with the annual report. This report was adopted.

GENERAL OXFORD.—Lord Walsingham reported the recommendation of the Committee that advertisements be issued inviting tenders for the supply of refreshments to the showyard at Oxford. This report was adopted.

It was moved by Col. Challoner, seconded by Lord Walsingham, and carried unanimously, after some conversation respecting the exceptional nature of the circumstances which led to the proposition:

"That a sum of £500 be given to the Manchester Local Committee, in aid of the extra and exceptional expense occasioned by the compensation awarded to the tenant of the trial ground."

Col. Kingacote, C.B., M.P., having called attention to the incomplete state of the Society's library, suggested the desirability of a grant of money for the purpose of bringing its contents up to the present time, and of an annual grant for the purchase of books from time to time being placed at the disposal of the Journal Committee. Lord Walsingham thereupon drew attention to the absence of accommodation for a large library in the Society's house, and Lord Bridport suggested the desirability of building a reading-room. Ultimately, at the instance of Mr. Torr, supported by Colonel Kingacote, the whole question was referred to a joint committee, to consist of the House and Journal Committees.

It was moved by Mr. Jacob Wilson, seconded by Lord Chesham, and supported by Mr. Milward:

"That the committee for the recommendation of judges be appointed at the March Council, that this committee shall sit in April, and that the absolute appointment of judges shall take place at the May Council."

This resolution having been carried unanimously, a committee was appointed for the selection of judges, consisting of the Implement and Stock Prizes Committees.

Mr. Torr gave notice that at the next monthly Council he should move "that judges of live stock be provided with catalogues in the same manner as judges of implements now are."

It was proposed by Mr. Milward, seconded by Mr. Torr, and carried unanimously, that Mr. W. J. Edmonds, of Southrop, Lechlade, be nominated as steward elect of implements.

A letter from Messrs. Holt and Glazier, on the utilisation of town sewage, was referred to the Journal Committee.

THE USE AND ABUSE OF TOWN SEWAGE.

At a weekly meeting of the Society of Arts, Mr. WILLIAM HORS, V.C., read a paper on this subject. He said :

When a man reads a paper on sewage, he generally thinks it necessary to commence with the camp regulations issued by Moses in the Wilderness, just as—with equal justice—old-fashioned books on gunpowder always began with an account of the imaginary invention of gunnery by Roger Bacon and Schwartz. Moses did not invent sewage. It is quite clear that the "Sewage Question" must have begun long before his day, and, in fact, must have first cropped up in the Garden of Eden itself. This is, perhaps, a somewhat prosaic view to take of Paradise; but the practical man is necessarily prosaic, and a careful investigation of this question dispels many prejudices and many illusions, and forces one to admit that, as Adam received a special permission to "eat freely" of every fruit in the garden except one, he must, as a physiological necessity, have been perplexed by the very same question which we are met here, some six thousand years later, to discuss. But no candid man, who is not committed to some sewage-precipitation or earth-closet heresy, can doubt that Adam utilised his sewage and grew his vegetables in the Garden of Eden by means of the same system of irrigation that I practise myself. I do not propose, therefore, to adduce any further proof of the antiquity of sewage irrigation, but rather to confine myself to the agricultural and economical desirability of its practice at the present day. As, however, no man can conveniently preach a sermon without a text, I will, if you will allow me, read, as texts, two short extracts from the *Times* newspaper. The first is taken from the *Times* of the 7th day of January last, and occurs in the letter of the Special Correspondent in Egypt. It is as follows: "The other day, at Sakhara, I saw nine camels passing down from the mummy pits to the banks of the river, laden with nets in which were femora, tibia, and other bony bits of the human form, some two hundred-weight in each net, on each side of the camel. Among the pits were people busily engaged in searching out, sifting, and sorting the bones which almost crust the ground. On inquiry, I learnt that the cargoes with which the camels were laden, would be sent down to Alexandria, and thence be shipped to English manure manufacturers. They make excellent manure, I was told, particularly for swedes and other turnips. The trade is brisk, and has been going on for years, and may go on for many more." The second text is taken from the *Times* of Thursday, the 10th instant, and is as follows: "According to returns furnished by the engineers of the Metropolitan Board of Works, the daily average quantity of sewage pumped into the river Thames, at Crossness, was 214,973 cubic metres, and at Barking, 157,091 cubic metres, equivalent to about as many tons by weight." Truly these two texts teach a startling lesson, and the modern philosopher may say with Shakespeare's philosopher Duke, that he

"Finds books in the running brooks."

To be ground into powder, or dissolved in sulphuric acid, as manure, to grow turnips, with which to fatten oxen for an unborn race of sacrilegious beefeaters, would probably have been considered by Pharaoh and his haughty captains a far greater indignity than to be swallowed up by the Red Sea.

"To what base uses we may return, Horatio!"

Probably no one would be found now to assert, as Liebig did, when he wrote his celebrated letters to the Lord Mayor in opposition to my proposals for utilising the sewage of London, north of the Thames, that no land plant could come to maturity, if grown in a medium of insoluble silica, and manured with liquid manure only. The proofs since obtained of the soundness of the principles I then advocated have been so overwhelming, that not even their most obstructive opponents any longer attempt to deny that liquid sewage, in its normal state, has a great and a practical value. By the admission, therefore, of even the most sceptical, the "running brooks, or rather small rivers, described above in the second extract

from the *Times*, as being injected into the Thames at Barking and Crossness daily, represent so much hard money wasted. Add to this the interest, at 3½ per cent. on the five millions laid out in the injecting apparatus, together with the tremendous annual expense of working it, and it must be confessed that this arrangement is the most extravagantly wasteful of which history furnishes any record. We profess to be a hard-headed practical people, and yet, whilst we ransack every other corner of the globe for animal refuse and remains with which to enrich our land, we go to an enormous expense to throw away the quotidian supply with which nature provides us at home—and this with a constantly increasing surplus of population and deficiency of food staring us in the face. This flagrant defiance of those very principles of political economy which we all profess to be guided by, is probably one of the chief causes of that flood of pauperism which all the machinery of government, even when in the most earnest and energetic hands, seems quite unable to stem. To remedy this state of things I have now laboured actively, and I hope, practically, for nearly nine years. During this time I have become painfully aware of the apathy with which this subject is regarded by most people, but I was not aware until lately how little the subject was understood. I had studied it so much myself that I forgot that others had not. Many still talk as if there were some room for doubt as to the value inherent in sewage. But this is susceptible of exact determination, and can be demonstrated as conclusively as a mathematical problem. It is a fact in chemistry that every human being, at a given age, produces yearly a certain average amount of ammonia, phosphoric acid, &c. Further observations are still required to enable us to fix the extreme limit of these productions, but existing knowledge enables us to fix a minimum value, below which, under any ordinary conditions, they cannot fall. There is an unknown, because a variable quantity in the margin of soapends, kitchen waste, liquid manure from stables, offal from slaughter-houses, street-washings, and many other matters which find their way into the sewers. But this is a margin which has to be added, not deducted, and therefore does not affect the minimum, but only the maximum, possible cost of the waste now going on in London and most other towns. Many of the most eminent chemists have conducted lengthened observations and experiments from many different points of view, in order to determine the value of the manurial constituents of this refuse. Anderson, Berzelius, Frankland, Gilbert, Hofmann, Lawes, Letheby, Liebig, Miller, Odling, Thudichum, Voelcker, Way, Wesarg, and Witt, are only a few of those who have investigated this part of the subject; and, not to weary you with technical details, I may mention that, as the result of an immense amount of work, a rough formula has been pretty well agreed upon among chemists, that the total value of all the constituents of sewage is about one farthing per ton of the liquid for every grain of ammonia per gallon, because it has been found that the value of the other constituents taken together is about one-third of that of the ammonia. Hence the important point in practice is to determine the quantity of ammonia, which gives the unit of value, and the engineer must then come to the aid of the chemist, and furnish him with the total number of tons of sewage in the year, with which to multiply his unit. Probably, if this unit were ascertained during one month in winter, and during another in summer, or during one month in spring or autumn, a sufficiently accurate result would be arrived at for most practical purposes; but it is evident that complete scientific accuracy could only be attained by analyses extending over several years. It was, therefore, a great disappointment to many besides myself, when a series of samplings and gaugings, intended to be exhaustive, of the sewage of the high and middle level sewers of London, which, at the suggestion of Mr. Way, I had caused to be commenced in 1865, before the formation of the Metropolis Sewage Company, were summarily stopped by the company: The results obtained were nevertheless, very instructive and reliable. The samples were taken every half,

hour, night and day continuously, for a period of 203 days; they were mixed together at regular intervals, and repeated analyses were made by Mr. Way and Dr. Odling. The result

was, to show an average of about 8 grains of ammonia to the gallon of dry weather sewage, and the following tables show the quantities passing the station during that period, the first

METROPOLITAN HIGH AND MIDDLE LEVEL SEWERS.

FINE WEATHER SEWAGE FLOW FROM 19TH MARCH TO 7TH OCTOBER, 1865 (INCLUSIVE).—WICK-LANE, OLD FORD.

	No. of days.	Gallons.	Average per day, in gallons.	
Sundays	25	442,628,000	17,705,000	} Daily average for fine weather, 27,431,000 gallons.
Mondays	24	669,057,000	27,877,000	
Tuesdays	24	708,335,000	29,514,000	
Wednesdays	25	754,949,000	30,197,000	
Thursdays	20	589,757,000	29,487,000	
Fridays	22	556,463,000	25,293,000	
Saturdays	24	766,632,000	31,943,000	

FLOW OF SEWAGE FROM 19TH MARCH TO 7TH OCTOBER, 1865 (INCLUSIVE).—WICK-LANE, OLD FORD.

	No. of days.	High level.	Middle level.	Total high and middle level.	Average for each day.	Flow increased by rain.
		gallons.	gallons.	gallons.	gallons.	
Sundays	29	208,484,000	350,032,000	558,516,000	19,259,000	Four days.
Mondays	29	334,826,000	569,521,000	904,347,000	31,184,000	Five days.
Tuesdays	29	357,749,000	634,942,000	992,691,000	34,230,000	Five days.
Wednesdays	29	383,901,000	675,067,000	1,058,968,000	36,516,000	Four days.
Thursdays	29	405,064,000	713,244,000	1,118,308,000	38,562,000	Nine days.
Fridays	29	423,744,000	739,872,000	1,163,616,000	40,124,000	Seven days.
Saturdays	29	341,688,000	619,204,000	960,892,000	33,134,000	Five days.
Totals	203	2,455,456,000	4,301,882,000	6,757,338,000	...	...

Average flow per day during the above period, 33,288,000 gallons.

showing the dry weather only, the second showing the total. Unfortunately, there is considerable doubt as to the population represented by this flow, and there are also one or two disturbing causes to be taken into account whose magnitude cannot be defined; but this is certainly a higher per-centage of ammonia, and, therefore, a more favourable analysis than previous observations led one to expect, and it must be remembered that, when the low level sewer is completed, an analysis of its contents may be expected to show a very perceptibly higher per-centage of ammonia, owing to the denser population, and the great throng of business men of all classes in the lower parts of the metropolis during the day, many of whom represent a temporary addition to even the total population estimated for, as they reside beyond the metropolitan boundary altogether. Now, the estimated "dry weather" sewage of London north of the Thames is 120,000,000 tons per annum, while that portion of the rainfall which does not escape into the Thames and Lee higher up by the "storm overflows," but reaches Barking, can hardly be less than another sixty to eighty millions of tons. It appears impossible, therefore, to place the manurial value of the stream with which, at a cost of £100,000 or £150,000 a-year, the Thames is polluted at Barking at less than £1,000,000 per annum, equal to about 8s. 8d. per head of the population. And this we may take as a pretty near approach to the unit of value in estimating the yearly worth of the sewage of a given population. The amount of water in which this is conveyed can only affect in a very minor degree its value as a manure. This should therefore be reckoned per head of the population, irrespective of the water supply. To regard this chemical value as the practical value of the manure if applied to the land, was stated in a scientific journal the other day, by an eminent chemist, to be a great mistake, and likely to prove a very ruinous one. In the mouth of a chemist who, in the ordinary routine of his daily business, is perpetually called upon to put a practical money-value, by means of chemical analysis, upon all kinds of artificial manures, this is indeed a strange paradox, and I was at first considerably puzzled by it, but the key to the paradox was in the reasons he gave for the statement. In considering so very wide a question, he had been led, by the fascinating process of

deduction, to travel beyond the sphere of his own personal knowledge, and so had fallen into a very natural mistake. One distinguishing peculiarity of sewage as a manure is the ease and convenience with which it can be applied to growing crops. This is, of course, an enormous practical advantage. Instead of waiting until the land had been manured between two crops, it may at once be ploughed up, and another crop put in—a saving of time which will frequently pay the farmer's rent for him. It is only natural that this peculiarity should be widely taken advantage of; hence sewage is more frequently applied to growing crops than to fallow land. The chemist alluded to had probably always seen it so applied, and regarded it solely from that point of view. Consequently, he said that the obligation of applying water to crops at all times of the year, whether they required it or not, would be so onerous to the farmer, that the practical value of the manure contained in the water would be very largely reduced. This I at once admit; but I altogether deny that, where sewage irrigation is properly carried out, there exists any such obligation. In spring and summer there are always some growing crops which will benefit instead of suffering from the application of the water in which the manure is conveyed; it must be at once admitted, therefore, that during half the year the farmer must get the full chemical value of the sewage—and something more, for the power of watering his land whenever he pleases has a very practical additional value. In the other half of the year it is quite true that the water in which it is contained might often do as much harm to some plants as the manure could do good. But why suppose that a shrewd practical farmer is to be such a fool as to apply sewage to growing crops under such conditions? Clearly, he would turn it over his meadows or fallow land. The vastly greater part of the manure of all kinds throughout the country is applied precisely at that time of the year, and to fallow land. It would be obvious, therefore, to the very slowest bodied intellect in the country that this is the proper course to follow with sewage, under the conditions stated. Of course where sewage irrigation is not properly carried out, and where the area of the land irrigated does not bear a proper proportion to the population manuring it, the full chemical value will not be obtained, because the supply of food will be in excess of the

demand of the crops; just as a market-gardening neighbour of mine, who, last autumn, put 40 tons of the farm-yard manure, 10 cwt. of guano, and 10 cwt. of bones per acre on to one of his fields, will be disappointed with his results; but the accidental topographical exigencies of particular localities, and the accidental manurial eccentricities of particular market-gardeners, are disturbing causes which in no way require to be taken into account in such calculations. Would my friend, the chemist, say that because my neighbour will most assuredly not get the full value of his guano and bones, therefore any farmer who sends to his laboratory to ascertain the practical money value of any particular manure from its chemical analysis will be grievously misled? What would the chemist say if I assumed that farm-yard manure could only be applied to growing crops, and then asserted that the damage done to the land and crops in carting on the manure was so great that it counterbalanced the benefit conferred? Surely no test of the practical money value of any manure can be as conclusive and reliable as an accurate analysis of its constituents. As a matter of actual practice, I am just about to sow 10 acres of onions, which will not receive a drop of sewage while they are growing, the land having been manured quite sufficiently by irrigation while fallow. But in refutation of the fallacious conclusion deduced from a partial view of the question, and an imperfect knowledge of a branch of it which is not strictly within the province of the chemist, I can fortunately adduce a very high authority, namely, Dumas, who is not only one of the greatest, perhaps the greatest of living chemists, but is a man eminently distinguished for practical good sense. When he paid his visit to this country, in the early part of last summer, to deliver the inaugural Faraday lecture, he gave up a day to the inspection of the sewage irrigation at Barking and of the Barking outfall, accompanied by the President of the Chemical Society, and several other distinguished members of the profession. He expressed himself as being as much gratified by what he saw of the irrigation as he was shocked by what he saw of the outfall, and he repeated several times over "Oui, l'eau doit être la charrette de l'engrais" which may be translated freely, "water is the best dung-cart." With such an authority to support me in the "water-carriage" system, I am not afraid of a little adverse criticism. There is another objection which is sometimes urged to the utilization of sewage by irrigation, although it is, perhaps, the most groundless of all. I have heard it asserted that it was an utter mistake to convey manure in water, because in the course of a very short journey all the ammonia escaped by evaporation. Such a fallacy is, of course, never advanced by a chemist, as it is chemically impossible; but it is worth a passing notice, because it is clung to with such fond tenacity by some dogmatic laymen. In the first place, in fresh sewage, there is no ammonia present in a free state; and when chemists talk of the amount of ammonia in a gallon of sewage, they mean the amount that can be chemically evolved by analysis. But supposing an artificial ammoniacal liquor were substituted for sewage, and distributed over the fields by irrigation, and that this liquor were really a solution of free ammonia, these dogmatists would still be mistaken, for water has a greater affinity for ammonia than the atmosphere. If some ammonia is set free at one end of a room, and a basin of water placed at the other end, after a time all, or very nearly all, of the ammonia may be recovered from the water. It is chemically impossible therefore that, even to please the most dogmatic of sewage heretics, the process can be inverted, unless the laws of nature are suspended. Dumas would not recommend a leaking dung-cart, and the ammonia is very securely imprisoned in the one that he recommends. This being so, there is still, however, the question whether some of those processes to which I have alluded as "sewage-precipitation and earth-closet heresies" are not cheaper and more effectual than irrigation. In reply to this question, I can only say that no other process which I have ever been able to hear of approaches irrigation, either in economy or efficiency. I am quite prepared to admit that some of the precipitation processes may, perhaps, be sufficiently practical for use in places where irrigation is impossible, if, indeed, there are any such places; but the annual cost of the best of them amounts to not less than 30 or 40 per cent. of the total yearly value of the sewage, whereas the annual cost of irrigation works, properly carried out, would not, on an average, exceed 10 to 12 per cent. of such value.

While quite ready to admit the possibility of some of these processes proving practically efficient, I wish however, to guard myself against being supposed to approve of any of them. It is evidently an operation of maximum difficulty, on a large scale, and at a cheap rate, to extract the ammonia and phosphoric acid from the sewage in a form sufficiently insoluble to remain behind when the water is driven off, and yet sufficiently soluble to dissolve as soon as put on the land as manure. As a chemist well said, in the chemical section of the British Association, at the meeting at Exeter, it is worse than if he were asked to extract a grain of wheat from a sack of chaff—it is as if he were asked to extract a cell of yeast from a trough of dough. And I confess that the advocates of the various precipitation processes, with many of whom I have had repeated and lengthened interviews, have always failed to inspire me with much confidence in their systems, for I have invariably found that they were quite unable to answer any of the fundamental questions I put to them, that they displayed an entire absence of exactness in their knowledge of their subject, lost themselves in vague generalities, were unable to explain the chemical action which they believed was set up by their own process, and invariably believed that their patent manures had, in some mysterious way, a fictitious value beyond that indicated by chemical analysis. At the same meeting of the British Association, I was asked to join the committee appointed the previous year to inquire into the "treatment and utilisation of town sewage," and, though avowedly a partisan of irrigation, I agreed to join, because I knew I could bring some practical experience to the aid of the committee; just as an extreme ritualist and an extreme evangelical were considered useful members of the ritual commission. I at once proposed to enlarge the scope of the inquiry and to increase the committee so as to include a representative of each branch of physical science to which any part of the entire question belongs. In order to procure the funds necessary for so extended an inquiry, the committee appealed to the various towns throughout the country for subscriptions, and their application has met with a favourable response from a large number of towns. It is their desire to inquire into every process having a semblance of practicability, and in this way, if any of these processes are indeed perfected, the fact will be authoritatively ascertained. Should the committee continue in existence for several years, and sufficient funds be available, it is indeed by no means impossible that the combined researches of so many men, assisting one another with their special knowledge, may throw considerable light on the origin and nature of diseases, and on the much vexed question of protoplasm, or the physical basis of life. Professor Tyndall's recent instructive experiment, following those of Mr. Crookes, go far to confirm the views of those who have devoted most time to the study of the spread of infectious diseases, but there is still much to learn as to their origin, while an attentive study of the organisms generated by the fermentation and decomposition of sewage, as well as of the abnormal developments induced in some plants by excessive stimulation with liquid sewage, cannot fail to reveal some further secrets of nature in that mysterious neutral territory where the animal protoplasm (if indeed this be an admissible term for an unknown and undefined principle) is for ever changing into the vegetable, and the vegetable changing back again into the animal. But to return to the more immediate subject in hand, there is still a third principle of sewage utilisation which is advocated very warmly by many persons—I mean the earth system. This is no doubt perfectly efficient within certain limits, and I have myself advised its adoption in several cases where I thought the circumstances admitted of its successful application. So far as a certain portion of sewage matter is concerned, there can be no question as to its complete efficiency, and as even a clumsy attempt to prevent waste is better than no attempt at all, I give Mr. Moule the greatest credit for the persistency with which he has warred against the present reign of waste; but his system is only that of Moses inverted. Moses told his countrymen to carry their sewage out of the camp and bury it in the land. Mr. Moule tells his countrymen first to carry the land into the town to be mixed with the sewage, and then to carry them both out to be finally buried. In both cases the sewage has to be carried out, but in the last the earth has to be carried out as well, in addition to being previously carried in. I think, therefore, that Moses was the better sanitary engineer

of the two; and irrigation is only the plan of the earlier engineer developed by modern appliances. Dumas said that water is the best dung-cart. It is the best spade also, for it buries the manure instantaneously, and is automatic in its action. The dispensation of sewage by irrigation is therefore strictly Mosaic. I have said, however, that I have occasionally approved of the use of Mr. Moule's system, and I should explain that I limit such approval to cases where there is a deficient water-supply, or where there is a rigid discipline, as in workhouses or barracks. For the service of an ordinary private house, much more of a village or a town, I consider the system utterly impracticable. Unless the amount of earth used in each house were enormous, it would of course be impossible that the soapens, kitchen refuse, and so forth, should be got rid of in that manner; yet nothing is more offensive in its decomposition than such stuff as this, although I am ready to admit that it may not be so dangerous to health as sewage matter proper. What, then, is to be done with this liquid? If it is allowed to go into the nearest river, the water will be hopelessly polluted for the purposes of drinking and cooking. Some system of precipitation or irrigation would, therefore, appear to be necessary, for this part of the sewage at all events, and is admitted to be so by Mr. Moule; but what a complication this admission implies. Supposing for a moment, however, that all the expense of sewers had been gone to, as in the ordinary water-carriage system, and that we were prepared to consent to the nuisance of long strings of carts bringing fresh earth into our towns, and longer strings of carts carrying away the used earth and sewage, accompanied by their own peculiar set of harpies, disturbing our families at unseemly hours, and "making night hideous" by their uncouth sounds and imperious demands for beer, would the system even then work for a single week without a hopeless breakdown? I think not, and I will give a very plain reason for my opinion. On this system all the bedroom "slopes" would have to be divided into two kinds; one, the bath water and soapens, to be emptied down the sewers; the other to be mixed with the earth. This would necessitate a double set of slop pails, one with a bright crimson "E" for earth, the other with a black "S" for sewer. But how long does Mr. Moule imagine that the ideal British housemaid would condescend to carry about these two different pails, containing two different liquors for disposal in two different receptacles? I cannot claim any special knowledge of the natural history of the housemaid, but I greatly fear that her organisation is not yet sufficiently delicate to enable her to appreciate this cloacal refinement. Surface irrigation is, in my judgment, both the simplest, the most efficient, and the most economical means of disposing of the miscellaneous waste and refuse from human habitations. The chance of anything going seriously wrong with the arrangements for getting rid of this noxious matter are reduced to a minimum, and the system is as beneficial to agriculture as to health. Of course, irrigation may be bungled just as any other kind of farming or manufacture may be bungled. But if the proportion of population to land is not excessive, and if the land is properly laid out at first, there is no reasonable probability of any sewage ever escaping into the stream unpurified; because, if it did, it would represent a loss of so much manure which the farmer has to pay for; therefore, it is his interest to apply it in such a way as to extract from it the greatest possible amount of organic impurity, and, if possible, to prevent Dr. Frankland from finding any traces of "previous sewage contamination" even in the third place of decimals. In point of fact, the sanitary and agricultural results will always go hand-in-hand; and the better the one, the better also will be the other. I do not yet go quite so far as my friend, Dr. Alfred Carpenter, however, who considers that sewage irrigation, by producing an abnormally rapid and vigorous vegetation, promotes the rapid disengagement of oxygen, in which he states that ozone is distinctly present. This is a most encouraging theory for an advocate of sewage irrigation, and, if he had been conducting his observations on my own land, I should probably have accepted Dr. Carpenter's theory, and started a hospital for diseases of the chest in the middle of one of my sewage fields, guaranteeing to the patients a certain number of irrigations in the month with genuine, unadulterated sewage, as received direct from London or Romford, as the case might be. The suggestion has a very considerable charm for a plain farmer; and I confess that I have given up, with no little reluctance, the idea of a copropathic

establishment on my farm, where London beauties might come out to recruit their wasted energies at the close of the season, and, attired in a *costume de circonstance*, with coquettish jack-boots, would perhaps at times listen to a lecture on agriculture from the farmer himself, while drinking his cream and luxuriating in the health-restoring breeze. But, as I said before, I am a plain farmer, and I felt instinctively that this was too pretty a picture to be realised on this earth; and then I remember that, however faultless I might consider my own irrigation to be, yet that I did not approve of the method in which it is carried out at Croydon, where the proportion of population to land is so excessive that it is chemically impossible for the crops to exhaust the organic matter continuously supplied to them, and that, therefore, there must be a dangerous accumulation or escape of impurity somewhere. I also reflected that at least one of the effects observed by Dr. Carpenter, and attributed by him to the action of pure oxygen, might just as well have been produced by ammonia or by moisture and carbonic acid, and I resolved to postpone the building of the hospital, so as to allow time for further observations. The first thing that the authorities of a town ought to consider, in purchasing land on which to utilise their sewage by irrigation, is whether their population is an increasing or a stationary one. If the former, they ought to secure as much as one acre for every 20 or 25 persons; and, if the latter, not less than one acre to every 40 or 45 persons, for this latter proportion represents as much sewage as land can either utilise or purify over a term of years. The land chosen should, if possible, be a light loam, because this is more easily cultivated, and better suited to the rapid growth of market-garden vegetables, not from its chemical composition—for with plenty of sewage this may be disregarded altogether—but from its physical condition, which admits of the delicate roots of young plants striking out more rapidly. The land chosen should, if possible, either be flat, or should consist of wide gentle slopes. Frequent and rapid slopes should, where practicable, be avoided. I have, on a former occasion, pointed out that the utilisation of sewage by irrigation, to be properly understood, must be divided into three parts, each of which must be considered separately; and it is useful to keep these distinctly in view. They are:—1st. Conveyance from the town to the country. 2nd. Distribution among the different farms or fields in the district to be irrigated. 3rd. Application to the soil or crops. The first is the province of the engineer, the second of the surveyor, and third of the chemist and farmer. With regard to the first, I will only say that I greatly prefer concrete, as now used so much in France, to either brickwork or earthenware pipes. Well made, it is absolutely water-tight and practically imperishable, two advantages which cannot be overrated. However, on this point I will not further enlarge, as I am already regarded by the engineers as a heretic, my doxy being different from their doxy. The second division of the question, or distribution, is one which presents very considerable difficulty. The expense of iron pipes is prohibitory, earthenware pipes are always going wrong, while earth ditches raised any height on embankment are very wasteful of ground, as their bases spread out to such a width. Wooden troughs have been used in some places where the sewage is required to be raised some height above the ground, but their perishable character renders them inadmissible. The only thing left to try was sheet iron troughs, and these are perfectly successful, and very convenient and cheap. The best form for strength and capacity, combined with convenience of working with sluices and openings, is what you see here. It has straight sides, which act as girders to carry the weight of the liquid, with flanges at the top to give lateral stiffness, and the bottom may either be semicircular, or flat, with rounded corners. Each form presents some advantages. Sheet-iron troughs of this size can be erected on legs of, say four feet from the ground, painted and finished for 6s. 8d. per yard forward, or fitted with these very ingenious openings, the invention of Mr. Edwin Maw, at every 10 yards, for 7s. 2d. per yard forward, completed in all respects. For efficiency, durability, and economy, nothing can approach troughs of this description, and they will distribute sewage over land reasonably well adapted for it, but where the levels will not admit of the use of earth ditches, at a cost of from £5 to £10 per acre. Yet I was recently shown a letter from a disconsolate mayor of a town not far from London, addressed to the president of the Institution of

Surveyors, in which he told the following piteous tale: Under the strong pressure of the Court of Chancery, his town had been compelled to cease poisoning their neighbours, had purchased 50 acres of land, had conveyed their sewage to the land, which he said was well situated for its reception, and in an evil hour they applied to a certain eminent engineer, who fancied himself a great agriculturist, to lay out their little bit of land for them. This gentleman positively sent them in an estimate for this little job amounting to the astounding figure of £5,000. Now, this is a fact; I saw the letter in the mayor's own handwriting. The third division, or the application of the sewage to the soil and crops, is a very simple process. The farm to be laid out having been carefully surveyed, the levels accurately taken, and the general scheme of the distribution settled upon by the surveyor, the lines of the main distributing channels should be marked on the map, being taken as much at right angles to each other as possible. Then the intervening spaces should be divided into "beds" or "lands" about 30 feet wide, and from 100 to 300 or 400 yards in length, according to the fall of the land, and handed over to the farmer. Then he should obliterate the marks of the old cultivation by a little shallow ploughing and cross-harrowing, when one deep ploughing will often suffice to throw up the land into ridges, as marked on the map by the surveyor. The irrigating channels are then taken out by plough or hand along the ridges. As I am not addressing agriculturists, I do not propose to trouble you with the details of the cropping; I will merely say that, with the allowance of sewage per acre I have indicated, the farmer or market-gardener will get far finer crops than with any other kind of manure, because, being already in solution, the manure can be more rapidly assimilated by the plants, and in larger quantities. As to the price that should be paid for the sewage, I have indicated what is its *bona fide* value, but it is evident that the actual price obtained by the town must, like every similar transaction, be a matter of bargain, into which many local circumstances may enter slightly to increase or diminish the figure agreed upon, and it must also depend of course on whether the town has paid for the conveyance of the sewage, or whether the purchasers have done this. Surely this little occurrence mentioned above, of the £5,000 estimate is, however, a bitter satire upon the relations at present subsisting between the central government and the local authorities. In the provincial papers there are perpetually to be seen eloquent and heartrending cries for help from perplexed vestrymen, who see Seylla, in the form of the Court of Chancery, on one side of them, and Charybdis, in the shape of the engineer, with his hundred pounds worth an acre of gimcracks, on the other. What are the poor people to do? They have duly polluted their river according to one Act of Parliament, and in many cases under considerable pressure from the Home Office; and now the Court of Chancery steps in and says that they must take their sewage out again, in accordance with another Act of Parliament, and they get neither pity nor assistance from the Home Office. This state of things had become so intolerable and anomalous that, a year ago, with a great flourish of trumpets, a "Royal Sanitary Commission" was appointed specially to devise a remedy. Many a despondent member of a local board has looked forward with the eye of expectant faith to the way of escape, to be indicated by the report of that august body, from the terrors of the Court of Chancery. To publish such glad tidings to trembling vestrymen was the final cause which brought the commission into existence, yet the president stated in the House of Commons, on the evening of Tuesday, the 16th instant, according to the *Times* report, "that scientific inquiry as to the best modes of carrying out various sanitary works they (the commission) postpone for the present, and entertain doubts whether public opinion is yet ripe for legislative prescription in such detail." That is to say they doubt the necessity for their own existence. But nevertheless we were informed on the same occasion that they were about to recommend a "plan of complete sanitary administration for all England and Wales, except the metropolis." The metropolis is no man's land, and therefore is left out, as a matter of course; but, in the present instance, the inhabitants of the metropolis may have reason to congratulate themselves on this strange exception, for what a terrible fate it will be for the other towns to be included in a "plan of complete sanitary administration," confessedly framed in a entire and absolute ignorance of all "sanitary works." This

is tentative legislation with a vengeance. What would be thought of a doctor who physicked his patient first and inquired into his symptoms afterwards? The Royal Sanitary Commission consider that public opinion is not yet ripe for inquiry, but that it is ripe for legislation. How a body of men, who are so sane individually, can be so insane collectively, is a psychological paradox that I will leave to the metaphysician; but it is quite clear that nothing but a vigorous expression of public opinion in an opposite sense can drive such a delusion out of their minds. Now it has occurred to me that, as the present Home Secretary was such an active member of the Committee of this Society on Food, the Society might usefully draw his attention—first, to the delusion under which the Sanitary Commission are suffering; secondly, to the great hardship of the position of these poor little country towns, floundering along in the dark; and, thirdly, to the enormous waste going on at present throughout the country of a manure which ought to be turned into food, and which represents, on the very lowest possible computation, four hundred millions of quatern loaves of bread, or their equivalent, in some other kind of food, lost to the country every year. To utilize this manure would provide work for very many hands now idle, and would provide food for more than five times the total number of paupers in the three kingdoms. As a case in point, the Romford sewage farm, which is now in my occupation, formerly provided work, so I have been informed, for three horses, two men, and a boy, with a little extra labour once a-year. But the increased production obtained from land under sewage necessitates increased labour, and I have already got thirteen horses upon it, a dozen men, and shall very shortly have to increase the number of horses, and to more than double the number of hands, while the production of food will be augmented in a still greater ratio. The utilization of sewage is, then, the true statesman-like remedy for the evil of pauperism. It would, so far as it is acted, be a radical cure, whereas emigration, so far as it acts, is only a Malthusian palliative. The one is creative—the other destructive. The one reproductive—the other exhaustive. The one increases the national wealth, directly and with certainty; the other decreases the national wealth, directly and with certainty, while it only offers a contingent prospect of an indirect benefit through possible future trade. Surely, this is a question which is even more imperatively urgent than the Irish land question, yet Government neglects it, or it is relegated to subordinate officials who have no power of initiation, and session after session passes, and nothing is done. Things drift on from bad to worse, the waste increases, the pollution of rivers increases, and pauperism increases, but the subject is dull, unattractive, by no means sensational, not altogether quite "proper," cannot be made a "cry" of, and so is voted a bore and shelved, and is not allowed by our politicians to come "betwixt the wind and their nobility." But there are some things which cannot and will not be shelved, because they are "irrepressible"—the negro was one, the pauper is another, and the sewage is a third. There is a Nemesis for the punishment of all waste and all reckless extravagance; and even if we ship off all our present crop of paupers, yet, if we continue to waste our sewage, in another 25 years, when all the guano islands and mummy pits are exhausted, another crop of paupers will have sprung up, and there will be less to feed them with than ever. If Mr. Gladstone will spend a day on my farm, as Dumas did, he will find that the waste of sewage is the reason why—in the words of his great speech on the Irish Land Bill—"we have not yet solved the problem, or got to the heart of the secret of how to relieve the destitution which is so rife among us." If his attention can only be attracted to this subject, the waste will be stopped; and if this Society can attract his attention to it, they will confer on the nation a great and a lasting benefit.

Mr. BALDWIN LATHAM said he fully agreed with many of the views put forward by Mr. Hope, though he differed with him on some points. With regard to the general question of the utilisation of sewage, there could be no doubt of its being one of the most important of the present day, particularly when looked at in reference to the general condition of the water-courses of this country, and to the enormous waste of fertilising matter which was going on in every direction under the present sewage system, and, therefore, any suggestions made by Mr. Hope, and gentlemen of his class, would

be eagerly welcomed, he believed, by members of the engineering profession. He differed with Mr. Hope, however, not as to the value of sewage matter, but as to the mode in which it should be applied to land, for he believed that by the system advocated in the paper it was quite possible to apply sewage to land, and yet to speedily exhaust the most fertile fields. It was quite clear that if no manure were applied, the land would sooner or later become impoverished, and it was equally clear that even if sufficiently manured it would equally become exhausted, although the process would take longer; and he was convinced that by applying only the limited quantity recommended by Mr. Hope sooner or later there would be a failure. Taking an analysis of the Rugby sewage, which had been well ascertained, he found that its component parts represented for every 100 parts of nitrogen 27 of phosphoric acid and 42 of potash. It was, therefore, manifest that sewage was a manure poor in phosphoric acid and in potash, and consequently if sufficient were supplied to grow a good crop, it would be necessary to apply such a quantity as afforded the requisite supply of the poorest element. It was, therefore, impossible to get the full value out of the sewage without exhausting the fields, unless a sufficient volume were supplied. Very careful experiments had been made for the purpose of determining the proper quantity, and he believed that an acre of land ought to receive the sewage from 100 persons. And it must be borne in mind that, although particular crops would not require the whole of this, yet no loss would occur, because the affinity of soils for fertilising matter was such that nature would not allow the surplus to be wasted, but would store it up for future requirements. From an experiment of Liebig in a field near Munich, not of very great power of assimilating fertilising matter, it appeared that a stratum of soil, only four inches in depth, would absorb 2,076 lbs. of ammonia, 1,110 of potash, and 1,888 of phosphoric acid per acre; and if a crop of Italian rye grass were grown upon such land—that being the largest crop which could be grown—there would still remain behind much fertilising matter, which would remain stored up there for nine years before it passed away. But, in addition to that, Italian rye grass was a plant which died out in a limited number of years, and, therefore, it became necessary to substitute other crops, which would utilise the remaining valuable constituents, and thus no waste would occur. Mr. Hope also said that sewage contained matter in solution; but there could be no greater mistake. In dry weather sewers frequently brought down a large quantity of fecal matter in a solid state, and if that were put on the land, it would not only be destructive to vegetation, but would create an intolerable nuisance. It was therefore necessary that these solid matters, which were held in suspension, not in solution, should be removed before the sewage was applied in irrigation. Reference had been made to Croydon, and fault had been found with the quantity of sewage matter which was there applied to the land per acre; but it must not be forgotten that, Croydon being almost the first town to adopt this system, and that not with a view to realise a profit, but really to get out of the clutches of the Vice-Chancellor, it could not be expected that the most perfect arrangements would be adopted all at once; and as soon as the present contract was terminated, a different course would be pursued, for he had already been instructed by the Local Board to procure a much larger area of land upon which the sewage might be deposited; in fact, it would be about four times the area at present in use for that purpose. Croydon had borne the burden and heat of the day in this matter; and therefore he did not think reflections should be thrown out at her expense, without knowing what her present intentions were, for she was just as ready to go forward now as she was eight or nine years ago. He was sorry to say that much discredit had been thrown upon this system of sewage irrigation by the analyses put forward by Dr. Voelcker, to show how utterly impossible it was to purify a chemical solution when presented in a diluted form to the land. These results had been published in one of the agricultural journals; and he was sure that when the error which must have occurred in the experiments was pointed out, he would repeat them. As he was possibly the engineer pointed at in the paper, knowing pretty well what works were alluded to, he might say that the estimate of £5,000 included not only laying out and enclosing 70 acres of land, but the cost of construction of the whole outfall works, the filtering works, and all the apparatus for inter-

cepting the solid matter. In the whole of the irrigation works which he had in hand, and he was now laying out upwards of 400,000 acres in England and on the Continent, the cost would not exceed £10 per acre for all purposes.

Mr. B. RAWLINSON, C.B., said he knew Mr. Hope would not wish an erroneous statement to go forth, and therefore he might correct one observation in the paper by saying that the Sanitary Commission was not appointed for any executive purposes, as would be evident upon looking to the members composing it. It was simply a Commission appointed to inquire into and consolidate the present sanitary laws, one Act having been passed after another until confusion had become worse confounded. The chairman was Sir Charles Adderly, and he thought that fact was sufficient to justify his remark that the Commission did not intend to touch on the scientific part of the subject, and he hoped that as long as he lived, no Commission in this country would undertake to deal with such matters, so as to make teaching a Government department, as was the case on the Continent. Indeed, he feared they were already going a little too far in the appointment of inspectors; but he hoped they would not at any rate begin to teach English engineers how to lay out a sewage farm so as to make the most of it. With regard to the practical part of the question, there were other differences than those mentioned by Mr. Hope. There were differences of position in many cases, and he differed with him as to the kind of land most appropriate for the application of sewage, being of opinion (having had some experience in the matter) that the most difficult land to irrigate would be a large area of comparatively flat land. He believed the most favourable was that having a limited contour elevation, and he should not even object to rather steep gradients in some instances, provided that the sewage at the commencement was sufficient for gravity, even if they had to go to some expense for pumping. His reason was this, that in irrigating land having a considerable fall, the engineer could pass his sewage by contour grips and lines over the upper areas, could then get it over the intervening portions into a second line of carriers, and as it was almost impossible to take out all the fertilizing qualities of sewage by once passing it over and through any table-land area, he could pass it over twice, thrice, or even four times beneficially, and he could then discharge the water from the last carriers as pure as ordinary spring water. He did not say they would ever arrive at that pitch of perfection when it would be safe to recommend the clarified water from subsoil drains for culinary and drinking purposes, although he knew at that moment of an instance in which the strongest sewage he ever heard or knew of was used by the adjoining residents in this way as it flowed from the subsoil drains, and that was at the farm at Aldershot, and as this was the most perfect system of sewage irrigation that had come under his observation, a word or two in description of it might be allowed. It was perfect in every respect, not only because the difficulties overcome were the greatest, and the sewage by far the strongest, but because the results were by far the best. The Aldershot Camp Sewage Farm consisted of about ninety-eight acres of land, which was, as an old north country farmer once said, worth "nowt" an acre. It was absolutely worthless, consisting of 90 per cent. of sand, with a mixture of peroxide of iron, which was absolutely poisonous. Mr. Blackburn, the engineer who had charge of the works, and who fortunately, had had some experience in agriculture, broke up the subsoil, washed out the peroxide of iron, drained it, and laid it under a sewage irrigation of from 200,000 to 400,000 gallons per day, the sewage coming from the camp, and containing 20 grains of ammonia in the gallon; and an analysis showed that, while it had 20 grains of strong phosphoric acid to the gallon as it flowed on the land, the water from the subsoil drains only had half a grain. Mr. Blackburn said it was no use to irrigate land with sewage on the surface, or to plough it in the ordinary way; he invented a plough for the special purpose, and broke up the subsoil to a depth of 20 inches, and having irrigated that well with sewage, he got a crop of Italian rye-grass of from 70 to 80 tons to the acre. After two years, he laid down a breadth in potatoes, which he sold on the ground at £25 per acre, the purchaser being at the cost of digging and taking them away, and leaving the tops behind as a solid dressing for the land of considerable value. In the same autumn the land was broken up, prepared and sown with Italian rye grass, which he himself saw showing two inches above the

surface. If, however, a good profit was to be made out of land irrigated with sewage in the vicinity of a town, it should be made to produce every kind of garden produce used in the community, all kinds of grain crops being avoided, as entailing only waste of labour, land, and money. Italian rye grass, mangolds, potatoes, cabbages, French beans, and lettuces, could all be grown with advantage, but they required special knowledge and special care; for some must not be irrigated at all while the crop was in the ground, whilst others required quite a different treatment. In this way as much as from £100 to £200 per acre of gross receipts might be obtained, for he had seen a return made by persons on whom he could place implicit confidence, showing with a crop of cabbages and cabbage plants a gross return equal to £200 per acre. Between this and the ordinary produce of £5 to £10 per acre was a wide margin, quite sufficient to induce efforts in this direction. They were on the threshold of this question, and only just beginning to understand it; and as there had been so much joint-stock enterprises of late, he would suggest to any gentleman who wished to make their fortunes that they could not do better than form an honest company and go to some of the distressed towns which had been described as in the clutches of the Vice-Chancellor, and treat with them for their sewage and the land necessary to utilise it. He knew many towns which would receive them with open arms, and let them have the land at a fair agricultural price, and let them have the sewage in for nothing, and if there was any truth in chemistry, this could hardly be a bad bargain. But at the same time, it must be conducted with knowledge and care, for he himself was concerned in a speculation of that kind where both the sewage and the land was as good as any in England, and the climate propitious, but, owing to defective management in some way, they only got a dividend of $\frac{1}{4}$ per cent., whereas, by letting it in the ordinary way, having bought it on good terms, they could have realized 5 per cent. There were, therefore, two sides to the sewage shield, as to most others, but he believed, nevertheless, that in the proper application of this system there was a mine of wealth, by bringing common sense to bear, and avoiding blunders which had already been committed. On the other hand, in many places it had become a sheer necessity to do something of this sort, in order to avoid poisoning the rivers, and would be more and more so every day. Before sitting down, he would say that the man who could solidify sewage and make it a portable manure, could invent perpetual motion and square the circle. The most perfect chemical researches had yet failed to do more than take out one-seventh of the valuable properties of sewage in solid form; and taking a ton of sewage as being worth 17s. 6d., and treating it in any possible way—and he spoke from having been associated on the commission with some of the first chemists of the day—the result would be to take out solid matter to the value of 2s. 2d., and leave 15s. 4d. worth to go away with the effluent water, which might nevertheless appear perfectly pure and bright. On the other hand, when liquid sewage was passed through twenty inches of soil, it had but the barest trace of these valuable salts left in it. This, therefore, was the only true and profitable chemistry.

Dr. VORLCKER said Mr. Hope was such a zealous advocate for sewage irrigation that he could but regret his having put his pet child into such doubtful company as that of the negro and the pauper. Perhaps he had done so from a feeling that sewage was a nuisance which must be got rid of; but though this had been the prevalent idea for many years, he was convinced that the time was coming when it would no longer be looked upon in that light. It appeared to him that they had not sufficiently considered the difficulties in the way of the successful application of sewage to land, and had taken too one-sided a view of it, as if it were only useful for particular crops, such as Italian rye-grass. Few experiments, if any, had been made as to the effect of applying it to fallow land, and he should like it tried in that way on an extensive scale, applying, say, 10,000 tons per acre, which he believed would much increase its fertility for a succession of years, during which a regular rotation of crops might be obtained; and he feared that if it were the fact that the sewage of not more than 25 to 40 persons could be applied to an acre, there would be a very serious impediment thrown in the way of its adoption. He should rather agree with Mr. Latham, that an acre would take, at least, the sewage from 100 persons, and if it were applied to fallow land no doubt that quantity might be much increased. Mr. Latham's

criticisms on his experiments had only been brought to his attention that evening, and he was hardly aware to what he referred. Probably that gentleman was of opinion that land was capable of absorbing every particle of ammonia, phosphoric acid, and potash, but if so he was in error. With regard to any special exception he had made as to the power of absorption and retention of ammonia and other fertilising matters, he had been corroborated by other chemists, who had gone very carefully into the matter, and who had found that although soils of every description had the power of fixing and retaining for a length of time immense stores of these bodies, yet they did not retain them in a very diluted, watery solution; and it was fortunate they did not, or how would the plants receive it? In these results he had been corroborated by Dr. Wolff, Dr. Knops, Professor Sonnenschein, Warg, Stohmann, and other chemists, who had laboured in the same direction. In conclusion, he could not but agree with the general principles laid down by Mr. Hope, and trusted that before long they would be generally carried out in practice.

Mr. MECHER said he felt much indebted to Mr. Hope for his interesting paper, in the main points of which he fully concurred. London had a population of about $3\frac{1}{2}$ millions, which consumed daily the average annual available produce of 20,000 acres of English land, in addition to innumerable cargoes of wine, sugar, coffee, and many other things, which must be added to the total; and every farmer would agree that the results of that consumption must be highly valuable when restored to the soil. The only question was the application of it. He had applied sewage for the last 20 years, both in a solid and liquid state, the details of which he would not go into further than to say that, so far from spending £100 per acre, even with the use of iron pipes and gutta percha tubing, the cost had not exceeded £2 an acre. The great difficulty appeared to be this—everyone was anxious to get rid of sewage, but there did not seem a corresponding demand on the part of farmers to make use of it. One would have thought that the farmers and landowners would have taken a deep interest in this question, and, after all, there was no real difficulty in applying it; it was only a question of pipes and pumping; and two of the most eminent hydraulic engineers had stated in evidence before the House of Commons that 1,000 tons of sewage, as it came from the sewer, could be raised 300 feet at a cost of from 13s. to 14s., and then with a fall of 5 feet per mile, it would flow 60 miles. Water was, in fact, brought to Glasgow from Loch Katrine, a distance of 40 miles, with only a fall of 200 feet on the whole distance. To go back to his first illustration, he might say that the only difference in the consumption of 3,500,000 of human beings and the same number of sheep, considered in reference to the value of the proceeds for manure, was that the sheep consumed the bone earth in the food which they ate, whilst human beings did not; therefore town sewage was deficient in that most valuable constituent, which, however, Liebig had shown could be supplied at a very small cost indeed. To throw away therefore the daily produce of 20,000 acres was a sinful neglect, and was as bad as throwing gold into the Thames. The great point was to get landowners to feel an interest in the question, and to appreciate the value of what was being now wasted.

Sir WILLIAM DENISON said that, as chairman of the Rivers Commission, he had listened with a great deal of attention and interest to what had been said. The Commission had just sent in their report upon the application of sewage to the Mersey and Irwell. The difference of opinion seemed to be not at all as to the fact of sewage being highly valuable as manure, but as to the quantity and mode of applying it, the character and amount of its action on different soils, and a variety of other minor matters. The truth was, what was really wanted was a series of experiments, on a large scale, which would set many of these questions at rest. The business of the Rivers Commission was not to enter into the question of the application of sewage, but to see to the cleansing of the water of rivers, and it became a question, therefore, of practical importance over what amount of surface town sewage must pass before it was in such a state that it might be allowed to flow into the rivers without injury, and experiments had been conducted with that end in view. These were carried on at Woking, because there the sewage from the prison was at their disposal, and there was also convict labour which could be made use of; but the soil was not of such a character that any general deductions could safely be drawn from the results

obtained. He hoped, therefore, that next year a more extensive series of experiments of this character would be carried on, and the results made known as speedily as possible. As far as his experience went, he agreed with Mr. Latham that the sewage from 100 people might be distributed over an acre of land; but he thought that after passing over this acre of land, though it would be sufficiently pure to be allowed to flow into a river, yet it would still contain matter which would be useful as manure. He believed, therefore, that the sewage from 100 people would irrigate profitably nearly six acres, and therefore the expense of pumping, which in many cases would be enormous if applied to one acre only, would be so distributed as not to be excessive. All these questions, however, were matters to be decided by experience alone, and would depend in a great degree on the character of the soil.

Mr. TARGET said he had a plan to bring forward, by which he claimed to be able to thoroughly deodorise human excreta in an easy and simple manner, which he would describe. In the first place, he begged leave to hand to the Chairman a bottle containing the result, which was perfectly inodorous and innocuous. His plan was to deodorise the excreta when first evacuated, by means of elements which were at hand in every household. Moulé's system had failed, not because it was a bad system, but because of the inconvenience of having to introduce a constant supply of earth; but he mixed simply the contents of the dust-bin, ashes, rags, dry refuse of all kinds which accumulated in every house, which had to be removed by the scavenger, and which he proposed should still be removed by the same agency, *plus* the sewage matter. This system was now in successful work in Salford, one of the most populous towns in the north, and also in Oldham, Rochdale, and other places. The plan consisted simply in lining a tub with zinc, into which the ashes, refuse, &c., were put, and mixed with a small quantity of sulphate of iron. The whole being mixed up, a mould was put into the tub, leaving a space of about three inches all round, into which the mixture was rammed, and the mould being removed, a cavity remained into which the dejections were received, when it was found that the urine was immediately absorbed, and the solid fæces were left almost dry and totally inodorous. These tubs could be removed periodically, say once a week, and there would be no more pollution of rivers from this excrementitious matter finding its way down the sewers, and the Sanitary Commissioners and Acts of Parliament would be no longer feared. There was only one difficulty—viz., that no water must be admitted to the closet; but that had been got over by a slight modification of the apparatus, by which the water used in cleansing the pan of a water-closet was sent away to the sewers, whilst the dejections, and even the urine, were received into the tub below. They had thus got rid of the only difficulty in the way of the full success of what was called the "Gould absorption system." The patentees were so thoroughly convinced of the entire success of this adaptation, that they offered to carry out the system in any town, large or small, free of expense, relying for their remuneration simply on the sale of the manure, and this showed some confidence in the value of the invention. The cost of the materials was nothing, and therefore there was no expense in working it out.

Dr. WYLD said he could not agree with Dumas, that water was the best dung cart. By using it as the vehicle of sewage, there were exhalations constantly rising up into the streets and creating diseases. He had recently had a case of typhoid fever in his own house. A very bad smell had been experienced, the cause of which was found to have been rats eating a hole into the sewer, and had every reason to believe that this was the cause of the fever. Turning excrement into the sewers was, he believed, the cause of a great deal of disease. The great merit of Mr. Target's system was that all the materials necessary were at hand in every house. He could speak from experience as to its perfect success; and, in fact, a friend of Mr. Target kept one of them in his bedroom and never experienced the slightest ill odour or bad effect, and he thought it might be carried out practically without much difficulty. In Salford a speculator had purchased from the corporation the privilege of removing the sewage, which had hitherto cost the town £3,000 a year. This gentleman had come forward, and given the corporation £3,000 a year to be allowed to do it, so that the thing was practically demonstrative, and not only was this the case, but the ratepayers were now up in arms, and asserting that the corporation had sold it too cheaply.

Sir WM. DENTON said he had seen the operation of this system in Lancashire, and he believed it to be efficient in getting rid of a portion of the excrement, but that did not get rid of sewage. All the slops from the kitchen of every variety had still to go down the sewers, and the portion removed in this way was but trifling compared with the whole of that which polluted the rivers.

Mr. RAWLINSON said that when he referred to solidifying the sewage he had only intended his remarks to apply to dealing with the liquid sewage at the outfall of drains, and to converting that into portable manure, but still he perfectly agreed with Sir William Denton, that removing human excreta was but a small part of the work required to be done in cleansing a town. There were the washings from the surface of the roads, which must be taken away by the sewers, and many other varieties of liquid refuse, which no such system as that referred to could get rid of. With regard to the effluvia which had been spoken of by Dr. Wyld, he would say that was simply the consequence of bad drainage. No drains should ever ramify beneath the basement of any house or any building, however large. They should end at the outside wall. In dealing with separate manipulative processes there would always be difficulties. He had three closets in his house, and some persons had a great many more, and he did not think they would ever get servants to pack these things and carry them backwards and forwards.

Dr. BURN said he had spent the greater part of his life in India, and there the system of dry manipulation of sewage matter was universally practised, and appeared to him quite successful.

Captain SELWYN, R.N., desired to call the attention of the meeting to the two tables showing the constant flow of sewage at Stratford, which really had nothing whatever to do with the question of human excreta, and therefore it was abundantly evident that any system of dry deodorisation, such as had been described, would be totally inefficacious for dealing with town sewage. It was a misapprehension of the whole question. They had to deal with sewers as they were.

Dr. PAUL suggested that the discussion of systems of dry deodorisation of solid sewage matter was one foreign to the subject of the paper. It was well worthy of consideration of itself, but he did not think it was desirable to mix the two things together. There were some cases in which it would be useful, and others where it would be quite out of the question; as, for instance, in London and other large towns, where water systems had been already adopted. In all these cases, the point to consider was, how to dispose of the liquid sewage, but in other parts, and particularly in some of the populous towns in the north, he was aware there was a strong feeling against the use of water as a means of carrying off the town refuse. If, however, the subject were brought forward separately, it would be likely to receive more attention and more justice.

Mr. HOPK, in replying to the observations which had been made, said he had been slightly misunderstood in some respects, in consequence of having omitted several points in his paper, in order to keep it within reasonable length. For instance, Mr. Latham had misunderstood him with regard to the number of persons per acre which he had mentioned. He did not mean to say that he would never, under any circumstances, apply sewage from more than 40 or 45 persons to one acre in a year, but that was about the amount which, on an average of a number of years, could be profitably applied. Latham said that there would be no loss in putting an extra quantity of sewage on the land, because what was not exhausted would be stored up in the soil, but if they continued this year after year it must come to an end some time; and where the land had stored up as much as it could hold, it was a necessary consequence that pollution would follow. With regard to irrigating with solid matter, that was another point which he had not enlarged upon, but he certainly should never propose to float down matter of that sort in its crude state over the surface of the land. It would be worse than useless from an agricultural point of view, and would, no doubt, create a great nuisance. All this solid matter must therefore be got rid of, either by mixing, which he believed was the best system, or by some process of intercepting it, which was not so effective, because it had then to be carried over the land instead of carrying itself. He did not agree with Mr. Rawlinson that land with steep slopes was the best

for irrigation purposes. No doubt Mr. Rawlinson was right as an engineer, but he was wrong as a farmer, because it was impossible to cultivate such land properly and comfortably, so to say, if the sewage were applied by contour lines. Every time that land was ploughed it was moved either upwards or downwards, which would interfere with its contour lines, unless you used nothing but a turn-wrest plough, which formed the furrow the same both ways, and these were both more expensive and less durable than those of the ordinary construction. He had had experience on both flat and steep lands, and his opinion was that the convenience of the farmer was the great point to be looked at, and this was too often neglected by engineers, who were rather disposed to force their systems upon farmers, instead of ascertaining how they could meet their requirements. Mr. Target's plan had, he believed, all the defects of Mr. Moule's, and one more, because he did not see how these things were to be arranged in villages and small towns where there were no scavengers. He should be very loth to ask his housemaid to operate on one of these affairs, and if he did, he did not think she would remain in his service after that day month.

Professor JOHN MARSHALL, F.R.S., the chairman, in proposing a vote of thanks to Mr. Hope, said the result of the discussion showed that this was a very fit subject to be brought forward by the Society of Arts, and he hoped they would press it forward in every possible way. There was, first, that admixture of scientific and practical work to be done which required the ventilation which all such questions received at their meetings, and he had no doubt that good results would follow from that evening's consideration of it. Mr. Hope was evidently armed at all points on this question. There might here and there be a weak place in his armour, through which an adversary might thrust a lance, but he was, in the first place, thoroughly acquainted with the subject, and, in the second place, he had had practical experience upon the very point now at issue. The time was now passed when it was doubted whether sewage was offensive and noxious, and they had also passed the time when it was necessary to inquire whether they could substitute any other mode of treating town sewage in a great number of instances, for out of ninety-six towns which were thoroughly sewered, there were only fifteen where the sewage was made use of upon the land. This, therefore, was a question vitally affecting all these towns, and also the metropolis, and it ought to be argued to the full. He was therefore of opinion that the introduction of the question of earth closets and other systems of dry deodorization was rather out of place, but he had not thought it right to put a stop to the discussion, because he felt it was a question which, in many cases, had great practical value. The great defect of any such system must always be that it left behind a vast amount of fluid matter of a noxious character undisposed of. Nor was it at all certain that typhoid fever resulted from the decomposition of human excreta; on the other hand, there seemed rather reason to believe that it might be the result of the decomposition of vegetable matter; and a great quantity of this must always be passed down the sewer with the kitchen slops, whilst fungi would also vegetate in the drains themselves, so that typhoid fever might still occur, even if all solid human excreta were prevented from entering. The meeting seemed all of one mind as to the value of sewage matter, but the point on which difficulty arose was the application. The engineering difficulties were admitted not to be great, but still they required experimental inquiries into the best mode of delivering the sewage upon the land, and utilizing it when it was there, and also to the best kind of land, the proportion of land to a certain number of persons whose sewage was to be applied, the character of the irrigation, the crops which might best be treated with it, and the proper seasons for its application. All these were points of detail, and as the object of the paper had been to raise a discussion upon them, no one could have brought it forward with better effect than Mr. Hope, who had had such favourable opportunities for forming an opinion, he having arranged for the exclusive use of the sewage from the small town of Romford, where he knew the number of inhabitants, and number of water-closets, and could easily gauge the quantity of sewage that flowed from day to day and hour to hour; analyse it as often as was desired, and distribute it in a certain order and on certain principles. In conclusion, he would say that Mr. Hope deserved the most

hearty thanks of the meeting for having brought this subject forward, and he hoped he would continue his experiments and make known the results. If he might say so without being considered fanciful, he would suggest that they might all take as their motto the name of the author of the paper, and might hope that in a short time sewage would be utilised instead of being wasted, and used instead of being abused.

The vote of thanks was carried unanimously.

Mr. HYDE CLARKE writes: "The valuation of sewage manure is to be taken in food and not in money. The sewage of London, valued at £1,000,000 would grow corn for at least 2,000,000 people, and this food-producing substance is now thrown into the Thames. It is worthy of inquiry, what is the quantity of corn imported into Belgium, which has a population of nearly 8,000,000 on a very limited surface. The production of food in Belgium is chiefly dependent on the economical application of manure, and particularly of human manure, and that to inferior land, the soil of Flanders being a sand, with a thin layer of humus. The increase of the population in Belgium actually contributes to the increase of food, while here these resources are annihilated by the novel legislation of the last few years. It is most desirable to have the experience of Belgium made known, a country within sight of us and in the same climate, where town manure is applied to a variety of crops—grain, cabbages, roots, potatoes, flax, tobacco, &c., and where the rent on light land is very high."

EXEMPTION OF DUTY ON FARM CARTS.

TO THE EDITOR OF THE WEST BRITON.

SIR,—I send you a communication I have received from the Board of Inland Revenue, who have, with great kindness, answered three letters I wrote them on the subject.

I do think that if the Legislature would omit the word "farm" and also the words "in the course of trade," that it would be a great improvement in the Act; and as it is a ridiculous piece of law-making to subject the owner of a cart or of a waggon to a fine of twenty pounds besides the amount of the duty on the same as a carriage, because on it the name, &c., is not duly inscribed, I think it would be a further improvement if the clause requiring the christian and surname, &c., of the owner were struck out.

And if, in addition to these suggested improvements, in the exemptions to licence for horses, in the clause No. 3, for the words "and not used for riding," was inserted "or not used for riding," I think that the Chancellor of the Exchequer would give us something that we could not much grumble at as a tax on carriages and horses.

Tregony, Feb. 23.

J. P. PETERS.

The following is the communication above referred to:—

Inland Revenue, Somerset House, London, W.C.,

22nd February, 1870.

SIR,—With reference to your letter of the 11th instant, I am desired by the Board of Inland Revenue to acquaint you that, upon further consideration of the general subject, they have now decided that the use of a duly-inscribed farm cart for the conveyance of goods or burdens in the course of the trade of any person, whether the owner or the hirer of such cart, shall not be treated as rendering a licence necessary for the cart.

On your putting yourself into communication with the collector of this revenue at Truro, steps will be taken to repay you, in due course, the duty which has been charged for your cart, if properly exempt, under the present order.

I am, sir, your obedient servant,

W. M. ROSSETTI, Assistant Secretary.

Mr. J. P. Peters.

DORCHESTER FARMERS' CLUB.—Mr. Homer in the chair. The vice-president, Mr. Genge, read a paper on "Irrigation," showing that a great loss accrues to farmers through proper attention not being paid to this important subject. In the discussion which followed several leading farmers of Dorset took part, all agreeing that the watering of meadows is not at present sufficiently attended to, and the water mills should be abolished, steam mills taking their place. The days of water mills were, it was thought, numbered.

THE BIRMINGHAM SHOW AND SALE OF SHORTHORNS.

The entries at this exhibition, held on Thursday, March 3, dropped from 137 of last year to 102; and the quality was as inferior as the number was reduced. Breeders were put upon their honour not to buy an animal in over the twenty guineas reserve; but as the seller was in nowise protected from the collusion of buyers, it could hardly be thought that first-class animals would be sent. Good animals will never be exhibited for show when compulsory sale is enforced; for, as a rule, the owner or breeder of a fine animal generally values him considerably higher than the public does, and the chances may possibly happen that he obtains his price—but more often he does not. The nineteen animals consequently entered for the £50 prize were a very inferior class, one of them was not sent, and three were passed away without a bid; indeed the show was only redeemed from mediocrity by the entries of Mr. Willoughby Wood and Mr. Wakefield. A finer lot of animals may often be seen at Pearith great fair, or at Darlington on the first Monday in March. The £50 prize was awarded to Mr. Willoughby Wood's Duke of Lancaster, a young fat bull of Bates' blood, possessing a few good but no extraordinary points, and lacking hair; had he been exhibited in a lean state there is no doubt that he would have come out a very inferior animal. The competition for him when he entered the ring was far from keen, and he was all but sold for 80 gs.; still he lingered on, and went to Messrs. Perry, of Acton Pigott, for 96 gs. The second prize went to an uneven red bull, of Mr. Bayes', and he was sold to Mr. Wodehouse for 54 gs. A red bull, of Bates' blood, highly commended, bred by Mr. Willoughby Wood and exhibited by Mr. Wakefield, was considered by many superior to this animal; and his price seemed to bear this out, for he was sold to Mr. Smith, of Wick, for 81 gs. The third prize fell to a lean white bull, of Mr. Swingle's, which went for 46 gs. Mr. Curtler, of Bever, had a few entries, one of which was unsold. In this class, his blood-red hairy Worcester Knight was remarkably low on the leg and very thick, quite of the Scotch bullock stamp, for which no doubt Mr. Rowland Wood fancied him at 45 gs.

The calf class between six and twelve months old went up to 37 entries, and one of the best, a young roan bull bred by Mr. J. C. Adkins was unnoticed; he had, however, the satisfaction of breeding the grandam of the first-prize bull, a thick hairless calf exhibited by Mr. Ambrose Robotham, that was fancied by a gentleman from Cornwall, and sold for 50 gs. A commended bull of Mr. Wakefield's made the best price, and was well sold to Mr. Robbins for 60 gs.; whilst the second-prize calf, also exhibited by Mr. Wakefield, made 47 gs. Mr. Crispin gave 44 gs. for a flat-sided roan, the third prize, sent by Messrs. Garue. A nice calf of Mr. Bowly's was highly commended, and sold for 46 gs.; but the other from Siddington was passed without a bid. Earl Beauchamp and Mr. Thos. Harris were also exhibitors of some useful calves. A very lean one of Mr. Curtler's, with two crosses of Captain Gunter's Duchess bulls, from one of Mr. Bowly's cows, only made 22 gs.—3 guineas less than the fee at which his sire and grandsire stand!

Mr. Wakefield sent nine heifers out of the fifteen cows and heifers exhibited, and a very creditable lot of animals they were. Lord Beauchamp, however, took the £10 prize and had the reserve number with the two he ex-

hibited—the former selling at 47 gs. to Mr. N. Catchpole, and the latter at 43 gs. Mr. Wakefield's lot were generally commended; 46 gs. was however the highest price that could be got, and this was given by Mr. Beale for Lady Geneva, a fine roan heifer; the nine averaging just 31 gs.

The nine aged bulls had Monk (24,616), the first-prize bull at the Bath and West of England Meeting last year, at their head; but the beef trade was useful here, and scarcely one went over butcher's value. The extra stock comprised three of Mr. Thos. Robinson's bulls, and five of Mr. Woodward's, some of which were passed unsold. The judges, Messrs. Sanday and Savidge, had no very difficult work, and their labours were soon over; out of the bull calves seventeen went at a first draft, and six followed them soon after. Taken as a whole the show was about as good as could be expected under the conditions. One feature however distinguished the meeting this year—there appeared no complaint about any lots being bought in, and a general impression prevailed that they were all sold, but how sold?—frequently under butcher's price, and after the expenses of railway carriage, entrance fee, man fare, and time had been expended. Not a few grumbled sorely at the one shilling admission fee and sixpenny charge for the catalogue, but so strict were the council rules, that one of the greatest exhibitors could only get one catalogue gratis, and the rest at sixpence a-piece, to circulate among his probable customers. Mr. Lythall's delicate health was sorely tried in the rostrum, and Mr. Thornton being present was requested to sell the cows and heifers. The Shorthorn business seems to open very flatly this year, but considering the general depression of trade, and the price of corn, this is not to be at all wondered at. The only surprise seemed to be at Birmingham, how so many inferior animals were sold; pedigree was of no value, anything of a blood-red colour with a little hair went up at once, but plain colours and white animals were passed time after time without a bid. The company was much smaller than last year, and consisted principally of farmers who had ordinary stock, dairymen, and the exhibitors, with very few of what may be termed Shorthorn notoriety; but they evidently most of them came for business, and there was no lack of customers, and if this sale may be taken as a fair sample there will be no difficulty in disposing of stock of a similar character.

JUDGES.—Mr. W. Sanday, Ratcliffe-on-Trent; Mr. R. Savidge, Chipping Norton.

CLASS 1.—Bulls exceeding twelve and not exceeding twenty months old.—First prize, £50, Willoughby Wood, Holly Bush, Burton-on-Trent (Duke of Lancaster); second prize £15, Chas. Bayes, Kettering (Vulcan); third prize £5, T. Swingle, Langham, Oakham (White Satin); reserve and highly commended, W. T. Wakefield, Fletchamptead Hall, Coventry (Lord Oxford Wild Eyes); commended, Robert Emmerson, jun., Over Dinsdale, Darlington (Royal Charlie); and Earl Beauchamp, Madresfield Court (Young Monarch).

CLASS 2.—Bull calves exceeding six and not exceeding twelve months old.—First prize, £20, Ambrose Robotham, Drayton Bassett (Bruce); second prize, £10, W. T. Wakefield, Fletchamptead Hall (Marquis); third prize £5, Thomas Garue and Son, Broadmoor, Northleach (Blondin); reserve and commended, Edward Bowly, Cirencester (Fourth Lord Waterloo); commended, W. T. Wakefield, Fletchamptead (Martyr); and T. Morris, Madismore Court, Gloucester (Socrates).

CLASS 3.—Best cow, heifer, or heifer calf.—Price £10, Earl Beauchamp (Coronet); reserve and highly commended,

Earl Beauchamp (Emblem); highly commended, W. T. Wakefield, Fletcherstead (Lady Geneva); commended, W. T. Wakefield (Queen of the Ocean), and W. T. Wakefield (Factory Girl).

Class 4.—Best bull exceeding twenty months old.—Prize, £10. T. Garne and Son, Broadmoor (Monk); reserve and highly commended, Colonel Loyd-Lindsay, M.P., Lockinge Park, Wantage, Berks (Governor Eyre).

The following is a list of the animals sold, the names of the purchasers, and the prices realised:

BULLS exceeding 12 and not exceeding 30 months old.

Duke of Lancaster.—Messrs. Perry, Acton Pigot, Salop, 96 gs.
Young Waterloo.—Mr. H. Harding, Gillingham, Bath, 33 gs.
Vulcan.—Mr. Wodehouse, Woolmer's Park, Hertford, 54 gs.
Patrician.—Mr. Cowley, Kilsby Grange, Rugby, 27 gs.
Lord Oxford Wild Eyes.—Mr. J. B. Smith, Wick, 81 gs.
Royal Charlie.—Mr. Wilson, Wroxall, Warwick, 46 gs.
Young Monarch.—Mr. Ashlin, Firaby, Spilsby, 45 gs.
Gay Laddie.—Mr. J. Newbould, Bagington, 25 gs.
White Satin.—Mr. Bradburne, Wedgefield, Wolverhampton, 46 gs.

Cherry Prince.—Mr. Anslow, Eyton, Salop, 25 gs.
The Worcester Knight.—Mr. R. Wood, Clapton, Northamptonshire, 45 gs.

Monarch.—Mr. Hamilton, Princethorpe, Rugby, 36 gs.
Worcester Archduke.—Mr. Lockhart, Culmington, Salop, 40 gs.

Master of Arts.—Mr. Tomlinson, Ashbourne, Derby, 27 gs.
Prince Regent.—Mr. C. S. Lindsell, Holme, Biggleswade, 30 gs.

BULL CALVES, above 6 and not exceeding 12 months old.

Matadore.—Mr. Simon, Fernhill, Market Drayton, 25 gs.
Donald.—Mr. Betty, Madresfield Court Farm, Malvern, 26 gs.
Marquis.—Mr. Attwater, Britford, Salisbury, 47 gs.
Saltan.—Mr. Mullins, East Penward, Shepton Mallet, 23 gs.
Red Duke.—Mr. Allen, Blaby, Leicester, 25 gs.
Blondin.—Mr. P. Crispin, Barnstaple, 44 gs.
Miracle.—Mr. Palmer, Hampton-in-Arden, 36 gs.
Champion.—Mr. Watson, Whitacre, 33 gs.
Martyr.—Mr. R. Robins, Stoneleigh, 60 gs.
King Cole.—Mr. Martin, Madeley, Salop, 39 gs.
Barnster.—Mr. Dodds, Wakefield, 28 gs.
Newton.—Mr. Hazelwood, Accleiton, Northamptonshire, 36 gs.
Progress.—Mr. Ogle, Kinnersley, Salop, 21 gs.
The Colonel.—Mr. King, Rowington, 24 gs.
Baron Hasforth.—Mr. Tomlinson, Ashbourne, 26 gs.
The Polar Bear.—Mr. Robotham, Drayton Bassett, 28 gs.
Bruce.—Mr. T. M. Cardel, Cosworth, 50 gs.
2nd Achievement.—Mr. Thompson, Appleby, Atherstone, 39 gs.
The Colonel.—Mr. Swinnerton, Thorpe, Tamworth, 31 gs.
Red Rover.—Mr. Clare, Twycross, 30 gs.

Solitude.—Mr. Lane, Stratford-on-Avon, 42 gs.
Carlo's Grand Duke.—Mr. Tunncliffe, Ecclehall, 22 gs.
Star of Hope.—Mr. Davis, Kidderminster, 21 gs.
Fourth Lord Waterloo.—Lady Emily Foley, Stoke Edith Park, 46 gs.

Rustic Chief.—Mr. Heatley, Patahull, 24 gs.
Socrates.—Mr. Kinghorn, Thorpe, Tamworth, 43 gs.
Excelsior.—Mr. Thornton, Strassham, 29 gs.
Julius.—Mr. Loxley, Stoulton, Worcester, 32 gs.
Lord Hawkeaworth.—Mr. Bickford, Oxley, Staffs., 29 gs.
Towcester.—Mr. Tins, Atherstone, 38 gs.
Blucher.—Mr. Martin, Madeley, 21 gs.

COWS AND HEIFERS.

Crocus.—Mr. F. Lythall, Banbury, 25 gs.
Iris 2nd.—Mr. Tunncliffe, Ecclehall, 23 gs.
Commemoration 3rd.—Mr. Harding, Gillingham, 32 gs.
Emblem.—Mr. P. Crispin, Barnstaple, 43 gs.
Coronet.—Mr. Catchpole, Ipswich, 47 gs.
Queen of the Ocean.—Mr. P. Crispin, Barnstaple, 38 gs.
Factory Girl.—Mr. Robins, Stoneleigh, 32 gs.
Lady Geneva.—Mr. J. Beale, Brockhurst, 46 gs.
Miss Oxford.—Mr. H. Burt, Grantham, 21 gs.
Wild Flower.—Mr. Robins, Stoneleigh, 29 gs.
Nightingale.—Mr. Martin, Madeley, 37 gs.
Milkmaid.—Mr. J. Beale, Brockhurst, 24 gs.
British Queen.—Mr. Martin, Madeley, 31 gs.
Moss Rose.—Mr. Bradburne, Wedgefield, 21 gs.

BULLS exceeding 20 months old.

Monk.—Mr. Upton, Rivenhall, Essex, 45 gs.
Knight of Wetherby.—Mr. Davenport, Ashby-de-la-Zouch, 43 gs.
Duke of Jamaica.—Mr. Davenport, Ashby-de-la-Zouch, 37 gs.
Fashion.—Mr. F. Lythall, Banbury, 31 gs.
Twelfth Baron Wetherby.—Mr. J. Foster, Coventry, 26 gs.
Governor Eyre.—Mr. Simon, Fernhill, Market Drayton, 32 gs.
Prince Pearl.—Mr. Morey, Market Drayton, 34 gs.
Oliver.—Mr. Chamberlain, Sharesill, 28 gs.

EXTRA STOCK—BULLS.

President Lincoln.—Mr. Arthur, Birmingham, 21 gs.
Sir Thomas Bates.—Mr. Upton, Rivenhall, 21 gs.
Saccharometer.—Mr. Davenport, Ashby-de-la-Zouch, 24 gs.
Duke of Darlington.—Mr. Morris, Kempsey, Worcester, 31 gs.
Rocket.—Mr. Beale, Brockhurst, 37 gs.
Tribune.—Mr. Davies, Minshull, Cheshire, 26 gs.
Boreas.—Mr. Welch, Evercreech, Bath, 25 gs.
Buoyant.—Mr. Brown, Wigginton, Tamworth, 21 gs.
Duke of Catton.—Mr. Geary, Daddington, 38 gs.
Emperor.—Mr. Watson, Sowe, Coventry, 33 gs.
Royal Towneley.—Mr. Horley, The Fosse, Leamington, 23 gs.
Pontiff.—Mr. Wilkinson, Madeley, 28 gs.

SALE OF THE LATE MR. MANN'S SHORTHORNS.

At the ASFS, Warwick, on March 1, by Mr. JOHN THORNTON.

The stock was brought out in very low condition, which had a great effect in reducing the prices. A large company assembled, and the animals were most extensively dispersed. Mr. Dalzell and Mr. Haslam took several lots into Cumberland and Lancashire, Mr. White and Mr. Cross bought some to go into Kent and Sussex, whilst others went into Gloucester, Northampton, Derby, Nottingham, Middlesex, and Buckinghamshire. The county people, although not keen bidders, kept many of the lots, Lord Leigh, Lord Willoughby de Broke, Sir G. B. Phillips, Mr. J. C. Adkins, Mr. J. Lane, Mr. W. Canning, and Mr. F. Cobb being the principal buyers. Some of the Didos made 40 gs. and upwards, the calves and yearlings selling well, but the great number of bulls and calves pulled down the prices, and on the whole, although a dull, it was considered a good sale for the animals in the condition in which they were offered. The 59 cows and heifers averaged nearly £25 each.

Lady Fairbairn, calved Feb. 20, 1858, by Fifth Duke of Oxford (12762), out of Fanchette by Plausible (11908).—Mr. Biggs, 19 gs.
Sylphide, calved May 8, 1858, by Sarawak (15238), out of Pintail by Janizary (8175).—Mr. J. K. Fowler, 42 gs.
Dahlia, calved April 20, 1859, by Londonderry (13169), out of Darling by Meteor (10526).—Mr. J. C. Hutton, 36 gs.
Amy, calved June, 1859, by Amiens (14095), out of Delight by Rubens (15209).—Mr. Bolton, 19 gs.
Oxford Lassie, calved July 18, 1859, by Fourth Duke of Oxford (11387), out of Elsie by Economist (11425).—Mr. Biggs, Cubbington, Buckinghamshire, 18 gs.
Daffodil, calved April, 1860, by Londonderry (13169), out of Darling by Meteor (10520).—Sir George Phillips, 34 guineas.
Crocus, calved 1861, by Amiens (14095), out of Cherry Blossom by Rebec (16132).—Mr. Biggs, 18 gs.

- Ada, calved June 9, 1861, by Earl of Derby (21637), out of Accident by Amiens (14095).—Lord Leigh, 19 gs.
- Cocoa, calved 1862, by Earl of Derby (21637), out of Cherry by Amiens (14095).—Mr. Meekin, 18 gs.
- Dorothy, calved April 11, 1862, by Oberon (15016), out of Darling by Meteor (10526).—Lord Leigh, 38 gs.
- Duenna, calved June 6, 1862, by Earl of Derby (21637), out of Dairymaid by Rubens (15209).—Mr. Haslem, 31 gs.
- Doubtful, calved July, 1862, by Earl of Derby (21637), out of Titmouse by Craven (14350).—Mr. Cobb, 37 gs.
- Alice, calved 1864, by Greville (19907), out of Ada by Earl of Derby (21637).—Mr. Bolton, 20 gs.
- Dulcimer, calved 1864, by Greville (19907), out of Duenna by Earl of Derby (21637).—Mr. Dalzell, Cumberland, 21 gs.
- Duchess, calved Aug. 9, 1864, by Oberon (15016), out of Dairymaid by Rubens (15209).—Mr. Hodges, 31 gs.
- Pearl, calved Aug. 17, 1864, by Royal Prince (20743), out of Prim by Fitz-Clarence (14552).—Mr. Arkell, 40 gs.
- Celia, calved 1865, by Baron Fleda (21221), out of Clopton by Mameluke (13289).—Mr. Wynn, 23 gs.
- Dinorah, calved 1865, by Baron Fleda (21221), out of Dew drop by Earl of Derby (21637).—Mr. Webster, 24 gs.
- Dorcas, calved June, 1865, by Falstaff, out of Damsel by Oberon (15016).—Mr. Cross, Sussex, 17 gs.
- Dowager, calved Aug. 21, 1865, by Oberon (15016), out of Dairymaid by Rubens (15209).—Mr. Brown, Clifton, Northamptonshire.
- Andalusian, calved April 9, 1866, by Baron Fleda (21221), out of Amy by Amiens (14095).—Mr. Webster, 22 gs.
- Attraction, calved April 10, 1866, by Baron Fleda (21221), out of Ada by Earl of Derby (21637).—Mr. Baker White, 19½ gs.
- Diamede, calved April 14, 1866, by Baron Fleda (21221), out of Dolby by Killie Crankie (18129).—Mr. Lane, 43 gs.
- Dairymple, calved April 22, 1866, by Baron Fleda (21221), out of Doubtful by Earl of Derby (21637).—Mr. Biggs, 23 gs.
- Deadmona, calved June 22, 1866, by Touchstone (20986), out of Dulcimer by Greville (19907).—Mr. Webster, 21 gs.
- Abbess, calved April 1, 1867, by Touchstone (20986), out of Ada by Earl of Derby (21637).—Mr. Wynn, 21 gs.
- Diadem, calved April 13, 1867, by Touchstone (20986), out of Dewdrop by Earl of Derby (21637).—Mr. Dunn, 26 gs.
- Custard, calved May 23, 1867, by Bull's Bay (23490), out of Cocoa by Earl of Derby (21637).—Mr. W. Canning, 28 gs.
- Delight, calved July 22, 1867, by Bull's Bay (23490), out of Duenna by Earl of Derby (21637).—Mr. Haslam, 29 gs.
- Kitty Clyde, calved Aug. 3, 1867, by Bull's Bay (23490), out of Celia by Baron Fleda (21221).—Mr. W. Canning, 24 gs.
- Dapple, calved Feb. 8, 1868, by Bibury Buttery (25631), out of Dorcas by Falstaff. —Mr. Harris, 23 gs.
- Constance, calved Feb. 15, 1868, by Bull's Bay (23490), out of Killie Crankie (18129).—Mr. Ratcliffe, 20 gs.
- Cornelian, calved Feb. 28, 1868, by Bull's Bay (23490), out of Crocus by Amiens (14095).—Mr. Ratcliffe, 27 gs.
- Audrey, calved March 19, 1868, by Bull's Bay (23490), out of Amy by Amiens (14095).—Mr. Robbins, Stoneleigh, 20 gs.
- MacKenzie 6th, calved April 12, 1868, by Bull's Bay (23490), out of MacKenzie 4th by Amiens (14095).—Mr. Lane, 16 gs.
- Duplicity, calved May 8, 1868, by Bull's Bay (23490), out of Deceitful by Killie Crankie (18129).—Mr. Cooke, 21 gs.
- Deodora, calved June 22, 1868, by Bull's Bay (23490), out of Dinorah by Baron Fleda (21221).—Mr. Thompson, 22 gs.
- Allegre, calved June 28, 1868, by Bull's Bay (23490), out of Andalusian by Baron Fleda (21221).—Mr. Lane, 20 gs.
- Ariel, calved July 2, 1868, by Bull's Bay (23490), out of Alice by Greville (19907).—Mr. Ratcliffe, 21 gs.
- Chloe, calved July 12, 1868, by Bull's Bay (23490), out of Celia by Baron Fleda (21221).—Mr. Robbins, Stoneleigh, 16 gs.
- Diana, calved July 20, 1868, by Bull's Bay (23490), out of Deadmona by Touchstone (20986).—Mr. Dalzell, 23 gs.
- Atlanta, calved Sept. 6, 1868, by Bull's Bay (23490), out of Attraction by Baron Fleda (21221).—Mr. Lane, 21 gs.
- Dimple, calved Dec. 20, 1868, by Bull's Bay (23490), out of Dorcas by Falstaff. —Mr. Oldham, 15 gs.
- Dandelion, calved Jan. 10, 1869, by Bull's Bay (23490), out of Dewdrop by Earl of Derby (21637).—Mr. Dalzell, Cumberland, 22 gs.
- Drama, calved Jan. 18, 1869, by Bull's Bay (23490), out of Diamede by Baron Fleda (21221).—Mr. Lane, 20 gs.
- Cora, calved Feb. 1, 1869, by Bull's Bay (23490), out of Crocus by Amiens (14097).—Mr. Bourne, Wiltshire, 18 gs.
- Dimity, calved Feb. 25, 1869, by Bull's Bay (23490), out of Doubtful by Earl of Derby (21637).—Mr. Hawkes, 23 gs.
- Dulce, calved March 1, 1869, by Bull's Bay (23490), out of Dulcimer by Greville (19907).—Mr. Hudson, Pershire, 20 gs.
- Annie 3rd, calved March 18, 1869, by Bull's Bay (23490), out of Annie 2nd by Nottingham (15014).—Mr. W. H. Browne, 12½ gs.
- Dabious, calved April 5, 1869, by Bull's Bay (23490), out of Deceitful by Killie Crankie (18129).—Mr. Hawkes, 19 gs.
- Damsel, calved June 16, 1869, by Bibury Buttery (25631), out of Dorothy by Oberon (15016).—Mr. Hudson, 22 gs.
- Adamanta, calved Oct. 10, 1869, by Bull's Bay (23490), out of Andalusian by Baron Fleda (21221).—Mr. Hatton, 13 gs.
- Sabrina, calved Oct. 12, 1869, by Bull's Bay (23490), out of Sylphide by Sarawak (15938).—Mr. J. King Fowler, Buckinghamshire, 56 gs.
- Achievement, calved Oct. 11, 1869, by Bull's Bay (23490), out of Attraction by Baron Fleda (21221).—Mr. Robbins, 15 gs.
- Lady Feversham, calved Oct. 15, 1869, by Bull's Bay (23490), out of Lady Fairbairn by the 5th Duke of Oxford (12762).—Mr. Thompson, 18 gs.
- Daphne, calved Nov. 12, 1869, by Bull's Bay (23490), out of Dorcas by Falstaff. —Mr. Brown, 10 gs.
- Drusilla, calved Nov. 14, 1869, by Bull's Bay (23490), out of Dinorah by Baron Fleda (21221).—Mr. B. White, 13½ gs.
- Columbine, calved Dec. 24, 1869, by Bull's Bay (23490), out of Crocus by Amiens (14095).—Mr. Brown, 14 gs.
- Amelia, calved Dec. 29, 1869, by Bull's Bay (23490), out of Ada by Earl of Derby (21637).—Mr. Lane, 18 gs.

BULLS.

- Bull's Bay (23490), calved Feb. 2, 1865, by Bull's Bay (19368), out of Polytint by Earl of Dublin (10176).—Mr. Bolton, 26 gs.
- General Bragg (26232), calved March 15, 1865, by Bull's Bay (19368), out of Maidenhair by Moccasin (18406).—Mr. Harris, 21 gs.
- Frightenem, calved Feb. 18, 1868, by Bull's Bay (23490), out of Diligence by Killie Crankie (18129).—Mr. Harris, 20 gs.
- Mantrap, calved April 10, 1868, by Bull's Bay (23490), out of Dolby by Killie Crankie (18129).—Mr. Hatton, 20 gs.
- Bardolph, calved April 17, 1868, by Bull's Bay (23490), out of Dora by Amiens (14095).—Mr. Figgis, 19½ gs.
- Singlepeeper, calved June 17, 1868, by Bull's Bay (23490), out of Daisy by Baron Fleda (21221).—Mr. Lowe, 18½ gs.
- Volunteer, calved June 26, 1868, by Bull's Bay (23490), out of McKenzie 5th by Touchstone (20986).—Mr. Drinkwater, 17 gs.
- Third Duke of Wetherby (36030), calved July 3, 1868, by Second Duke of Wetherby (21618), out of Oxford Lassie by Fourth Duke of Oxford (11387).—Mr. Smith, Barbary, Gloucestershire, 28 gs.
- Wellington, calved Aug. 22, 1868, by Bibury Buttery (25631), out of White Rose by Rebec (15132).—Mr. Pratt, 30 gs.
- Despatch, calved Jan. 1, 1869, by Bull's Bay (23490), out of Daffodil by Londonderry (13169).—Mr. Spencer, 17½ gs.
- Romulus, calved Jan. 15, 1869, by Bull's Bay (23490), out of Adelina Patti by Killiecrankie (18129).—Mr. James White, 11½ gs.
- Remus, calved Jan. 15, 1869, by Bull's Bay (23490), out of Adelina Patti by Killiecrankie (18129).—Mr. Horwood, Offchurch, 15 gs.
- Norman, calved Jan. 20, 1869, by Bibury Buttery (25631), out of Rosebud by Oberon (15016).—Mr. Brown, Chipston, Northamptonshire, 40 gs.
- Pericles, calved March 12, 1869, by Bull's Bay (23490), out of Amy by Amiens (14095).—Mr. Smeeton, 8 gs.
- Dromio, calved March 24, 1869, by Bull's Bay (23490), out of Amy by Amiens (14095).—Mr. Hutchings, 7½ gs.
- Hamlet, calved April 17, 1869, by Bull's Bay (23490), out of Dora by Amiens (14095).—Mr. Birt, 18½ gs.

Othello, calved July 2, 1869, by Bull's Bay (22490), out of Oxford Lassie by Fourth Duke of Oxford (11387).—Mr. Moore, 11 gs.
 Prince, calved July 20, 1869, by Bibury Butterfly (25631), out of Dowager by Oberon (15016).—Mr. Braylesford, 17 gs.
 Snow Ball, calved Aug. 23, 1869, by Bibury Butterfly (25631), out of Duchess by Oberon (15016).—Mr. Griffin, Chester-ton, 8 gs.
 Cassio, calved Oct. 5, 1869, by Bull's Bay (23490), out of Desdemona by Touchstone (20986).—Mr. R. Cowper, Wolverton, 11 gs.
 Troubadour, calved Oct. 15, 1869, by Bull's Bay (23490), out of Dalrymple by Beron Flea (21221).—Mr. Cooke, Snitterfield, 7 gs.
 John Gilpin, calved Nov. 9, 1869, by Bull's Bay (23490), out of Alice by Greville (19907).—Mr. Hyatt, 7½ gs.
 Defender, calved Dec. 24, 1869, by Bull's Bay (23490), out of Daffodil by Londonderry (13169).—Mr. Tibbits, Wroxhall, 6½ gs.

THE SALE OF SHORTHORNS at Oldwhat, New Deer, the property of Mr. Chalmers. There was a large attendance of farmers and others, and the sale was very successful. The following are the lots sold, with their buyers and prices:—

BULLS.—Duke of Kent, calved June 3, 1866; Mr. Ironside, 32 gs. Jock o' Drumblair, calved March 8, 1868; Mr. Chalmers, 20 gs. White Duke, calved May 15, 1868; Mr. Hay, 30 gs. Neptune, calved October 11, 1868; Mr. Milne, 16 gs. Gladiator, calved October 29, 1868; Mr. Hamilton, 25 gs. Squire of Cobham, calved November 19, 1868; Mr. Davidson, 19 gs. Columbus, calved February 16, 1869; Mr. Taylor, 18 gs. Nobility, calved March 7, 1869; Mr. Williamson, 31. Free-Trade, calved March 8, 1869; Mr. Murray, 31 gs. Amaranthus, calved March 8, 1869; Mr. Chesor, 27 gs. Baron Bunsen, calved March 16, 1869; Mr. Black, 20 gs. Scarlet Lustre, calved March 26, 1869; Mr. Langster, 21 gs. Scarlet Jacket, calved March 28, 1869; Mr. Beattie, 14 gs. Beau Ideal, calved April 6, 1869; Mr. Leslie, 20 gs. Bounce, calved April 8, 1869; Mr. Morrison, 22 gs. Viceroy, calved April 7, 1869; Mr. Forgie, 17 gs. Floral Scarlet, calved April 20, 1869; Mr. Anderson, 16 gs. Scarlet Nasturtium, calved July 6, 1869; Mr. Watson, 16 gs. Gentleman, calved July 17, 1869; Mr. Minto, 17 gs.

COWS IN CALF.—Flora, calved in March, 1860, Mr. Taylor, 23 gs.; Peer o' Day, calved in February, 1862, Mr. Robb, 26 gs.; Utopia, calved May 25, 1862, Mr. Milne, 25 gs.; Miss Butterfly 3rd, calved March 29, 1863, Mr. Watson, 23 gs.; Brenda, calved in March, 1864, Mr. Murdoch, 25 gs.; Roan Laurel, calved April 27, 1864, Mr. Marr, 27 gs.; Rosanna 2nd, calved April 9, 1865, Mr. Watson, 36 gs.; Lady Exmouth, calved March 22, 1866, Mr. Milne, 24 gs.; Verjuice, calved March 31, 1866, Mr. Ingram, 23 gs.

HEIFERS IN CALF.—Gentle Emma, calved March 5, 1867, Mr. Gordon, 36 gs.; Grace Darling, calved April 24, 1867, Mr. Robertson, 27 gs.; Laureate, calved May 22, 1867, Mr. Ironside, 27 gs.; Rarity, calved June 4, 1867, Mr. Duthie, 30 gs.; Lady Cobham, calved June 9, 1867, Mr. Gibbon, 26 gs.; Alix, calved in January, 1868, Mr. Robertson, 25 gs.; Miss Cobham, calved January 29, 1868, Mr. Stewart, 27 gs.; Verbena, calved April 11, 1868, Mr. Stewart, 20 gs.

LADY THORNDALE BATES 2ND.—Lord Dunmore, not Mr. Dunmore, was the purchaser of this cow, for 300 gs., at Mr. Slye's sale; and his lordship has just purchased of the Duke of Devonshire a bull calf, out of Lady Oxford 5th, for 500 gs. at a day old!

AUSTRALIAN VIEW OF THE ENGLISH WHEAT MARKET.

The probability that the markets of the neighbouring colonies will be virtually closed to our breadstuffs during the coming year renders the prospects of the home trade unusually interesting. It is quite clear that if we have even a moderate harvest we must find an outlet for our surplus elsewhere than in Australia, and the place to which we now naturally turn in

our perplexity is Great Britain. It has been demonstrated that with wheat at a certain figure exportation to the mother-country cannot be carried on without loss. Two or three years ago the discovery of this fact proved a substantial consolation to dealers and producers; and it is not at all unlikely that we shall have to take advantage of it once more during the twelvemonth before us, should it offer us the least encouragement. Prices have gradually receded to within a trifle of the amount represented as the minimum below which they need not fall, and there is no immediate ground for expecting a rise. The nominal condition of the English market at the present time is certainly not very encouraging to speculators. Rates have fallen lower and lower for weeks past, until our late telegram, bringing news to about the middle of November, quotes foreign samples at 47s. a quarter. This points to a fall in a little more than a month of close upon 10s. In the beginning of October, Dantzic, the head-quarters of the fine wheat supply, refused to abate anything of 58s. or 59s. a quarter, whilst the Continental markets generally exhibited a firmness which, though not reflected very strongly at Mark-lane, had a sustaining tendency upon prices there. By October 11 the continuous depression in trade had forced down quotations to the extent of 1s. or 2s. a quarter, although then best Dantzic found sale in London at 51s. to 53s., Australian being reported 2s. lower. Next week holders had to submit to a further reduction of from 1s. to 2s., owing to the overwhelming quantity of foreign grain under offer. A general impression, however, prevailed that wheat had reached its lowest point, and little anxiety to deal was manifested by sellers. On October 25 the published accounts show that a better feeling had prevailed, and that rates had been restored to the level of the previous fortnight's transactions. Unfortunately this reaction was but of short duration, for before the close of the month dulness had resumed its influence, and business could not be done except at a decline. The confidence of holders was not greatly shaken, and, whilst Australian was *pro forma* set down at 51s. to 52s., Dantzic best took rank at 52s. to 54s. Later accounts show that these prices could not be upheld. It is an ominous fact that the depression in prices realized for wheat in London during the month of October, 1869, find no parallel without a reference back to 1865. In 1867 they amounted to close upon 70s. a quarter, in 1868 to 53s., whilst for the present year they stand at a little over 46s. The reason for these very broad discrepancies has occupied the attention of statisticians and agricultural writers, and they are unable to reconcile them with the facts of the case. The harvest this year throughout England has yielded less than was expected, and less even than the average. The imports have been very large, but advices do not justify the belief that they will be maintained at the rates peculiar to the few weeks preceding the departure of last mail. But for the large quantities brought in from foreign markets during that time, the stocks of foreign grain in hand cannot be excessive. The Board of Trade returns show that the importation up till September 18 of 1868 totalled 6,210,410 quarters against 6,142,588 quarters in 1869. The monthly average, according to that return, would be 682,000 quarters a month, or less than 8,200,000 quarters for the year, an aggregate that falls below the mean of the last seven years. The question becomes a serious one whether the supply from the countries in closer connection with Great Britain than Australia is will shut out our producer from a chance of competing profitably in the London market. To a great extent the reply to this depends upon the exportable surplus of the United States, which this year appears unusually large. During the eight months ending with August, 1868, America contributed to English stocks 1,197,681 quarters; whilst for the same period of the present year she has furnished 1,755,142 quarters. This is a very tangible increase, materially affecting the prospects of other producers to meet with a cheering reception at Mark Lane. As things now stand, shippers will probably deem it unsafe to send cereals to the old country, but there is reason to believe that the present state of affairs is abnormal. The spirit of speculation, so rudely checked by the disasters of 1867, has not resumed its wonted vigour, and the quiet demand for immediate consumption cannot make any great impression upon prices. We must wait for another mail with more cheering news of the home market before we can put much reliance upon that market as a stand-by when other customers fail us.—*Adelaide Observer*, Dec. 26, 1869.

THE STOCKELD PARK SHORTHORN SALE.

BY MESSRS. WAITE AND CROUCH, ON FRIDAY, FEBRUARY 25TH.

There was a large gathering of agriculturists from the immediate neighbourhood, and of Shorthorn men from all parts of England. The first lot was Shuttlecock, a three years old bull by Mr. Fawkes' Lord Cobham (20164), d. Blue Bell by Reformer (18687), tracing back through Bridegroom and The Stuart to Norfolk, Ambo, Memnon, Pilot, and Agamemnon. This plan of commencing the sales with the bulls, contrary to the usual polite practice of giving precedence to the ladies, was a bold innovation. Nevertheless it was successful, making another illustration of the truism that there is no rule without an exception. The reason assigned for this was that by so doing the public would have an opportunity of seeing the value of the sire of all the young stock (with the exception of one young bull, Lord Cobham the 2nd, by Mr. Fawkes' Lord Cobham) tested by public auction before they competed for the progeny in the same ring. Had Shuttlecock been anything but a first-class animal, the policy adopted would have been more than doubtful, and would have depreciated the selling prices of the young animals to a serious extent; but it was otherwise. He stepped into the ring a noble animal—grand in his shape, rich in colour, of great frame, filled up in every point, yet full of style and gaiety, and looked every inch what one of the highest authorities of the day called him—"One of the very best, if not the best, of the bulls now out." And thus, after a slight hesitation, before the first hundred was telegraphed, the bidding ran up quickly to 240 guineas, at which he was knocked down to take up his residence in Surrey, within sight of the great city, where we are happy to learn he arrived safe and sound.

The competition displayed for the bull, and the figure he reached explain the spirited bidding for nearly all the young animals, and the satisfactory prices which some of them made. Shuttlecock 3rd, a beautiful roan, under a year old, straight in his lines, and of capital quality, was a good purchase for the Marquis of Ailesbury, at 46 gs. He is out of Miss Fawkes by 22nd Duke of Oxford, and goes through Fair Maid of Wetherby, Fair Maid of Perth by Lord Marquis (10469), and Buchan Hero (3283), Sir Thomas Fairfax (5196) to Lawnsleeve (365); a mixture of "all the bloods," including the popular Gunter. Shuttlecock 4th, a red roan, under a year old, is another gem worth "setting" in any casket of good-bred animals. He is full of substance, long, low, and level, out of Maid of the Glen by Harry of the Wynd, and is of the favourite Favourite (252) strain, through Punch (531) to Hubback (319). He goes to the classic region of Yorkshire Shorthorns, where the Studley White Bull in early days held sway, and is a good purchase for the Earl de Grey and Ripon, at 44 gs. Another yearling, Lord Cobham 2nd, white, by Mr. Fawkes' Lord Cobham, d. Miss Pyrgo by Clement Cleveland, who goes back through Fair Maid of Wetherby to Lawnsleeves, in the same line as the Marquis of Ailesbury's purchase, was knocked down at the very moderate figure of 30 gs. to Mr. Keyworth. How this should be no one could tell; yet everyone saw that it was a great bargain! Hair, frame, quality, and breeding are in this animal combined; and he will fetch three figures the next time he changes hands, should his purchaser be willing to leave hold of him. Lord Willoughby de Broke took away some capital young animals. The calf Battledore, roan, five months old, d. Miss Pyrgo 3rd by 23rd Duke of Oxford by Shuttlecock, of the same family as the Marquis's Shuttlecock 3rd, and the Lord Cobham 2nd, mentioned above, was worthy of the merry competition he excited. His price, 45 gs., does not make him a dear one to his lordship; for as a calf, he is as full of promise as he possibly can be, and if ancestry and beauty can make an aristocratic Shorthorn he will grow into one. We must certainly congratulate his lordship on the whole team which his commissioner drove away at the close of the sale. The Stockeld cows were a creditable lot, only in store condition, but in full profit. Of course many of them were well up in years. The prices fetched were nothing particular. Lord de Broke got a good cow, 7 years old, in Haxby's Last by 7th Duke of Oxford, at 40 gs.; Mr. Botterill secured a beauty in Miss Pyrgo, 10 years old, dam of Lord Cobham 2nd, at 40 gs.; and Earl de Grey got a cheap animal

of the fashionable lineage in Archduchess 3rd by 20th Duke of Oxford, dam Archduchess by Archduke (14099), at 35 guineas. He was also a lucky buyer in securing Archduchess 4th, a roan heifer, 1 year 11 months, by Shuttlecock, dam Archduchess 2nd, for 32 guineas. Archduchess 5th, by Shuttlecock, dam Archduchess 3rd, a roan calf, 11 months old, went to Mr. Baker, Gamston, Retford, at a nominal figure according to her merits, viz., 21 guineas; while Mr. Tomlinson, Cowthorpe, Wetherby, bought a sweet heifer "very cheap", at 28 guineas, in Nicolina 2nd, a roan heifer calf, 10 months old, dam Nicolina by 7th Duke of Oxford, grandam Lady of Avenal by Harry of the Wynd (12992). Nedora, a two-year-old roan heifer, by 26th Duke of Oxford, dam Lady of Avenal, bought by Mr. Mellor, at 38 guineas, will also make a fine cow. Several other of the young heifers and calves will be found after many days, now that they are dispersed, holding high and honourable position in the scale of Shorthorn society. On the whole, whatever may be thought of the prices, there can only be one opinion entertained by the breeders present, that it was impossible to imagine a whole tribe of young animals in which the characteristic merits of the sire were more clearly developed, for the young stock by Shuttlecock one and all father themselves.

BULLS.

Shuttlecock—Mr. Crosse, Blackwell, Surrey	240
Shuttlecock 2nd—Mr. Tinker, Thirsk	14
Lord Cobham 2nd—Mr. Keyworth, Wellingley, Doncaster	30
Shuttlecock 3rd—Marquis of Ailesbury, Marlborough, Wiltshire	46
Shuttlecock 4th—Earl de Grey, Ripon	44
Frank—Mr. J. Hepworth, Rogerthorpe Hall, Pontefract	25
Red Deer—Lord Willoughby de Broke, Compton, Verney, Warwick	16
Battledore—Lord Willoughby de Broke	45
Shuttlecock 5th—Mr. Knowles, Wetherby	30
Shuttlecock 6th—Lord Willoughby de Broke	33
Shuttlecock 7th—Mr. Dickenson, Partridge Hill	24
Bull calf—Mr. Sharpley, Melstrop, Louth	8

COWS AND HEIFERS.

Haxby's Last—Lord Willoughby de Broke	40
Maid of the Glen—Mr. Cook, Thixendale	35
White Hind—Mr. Loy, Aislaby, Pickering	27
Miss Pyrgo—Mr. Botterill, Driffield	40
Last Fawkes—Mr. H. Crossley, Halifax	31
Archduchess 3rd—Earl de Grey, Ripon	35
Miss Pyrgo 2nd—Mr. Botterill, Driffield	34
Brenda—Mr. Brigham, Slingsby	23
Nicolina—Mr. Bramley, Amcotts	35
Hamphwaite—Mr. Bromet, Tadcaster	19
Miss Pyrgo 3rd—Mr. Bromet, Tadcaster	27
Polly Haxby—Mr. Crosse, Blackwell, Surrey	24
Keady—Mr. Knowles, Wetherby	22
Tilla—Mr. Crossley, Halifax	17
Washbourne—J. W. Childers, Esq., Cantley	27
Blitz—Mr. Hatfield, Braithwaite	30
Miss Pyrgo 4th—Mr. Mellows, Melton	33
Madora—Mr. Mellows, Melton	38
Archduchess 4th—Earl de Grey	32
Maid of the Glen 2nd—Mr. B. Baker, Gamston	23
White Hind 2nd—Mr. Bromet, Tadcaster	20
Brenda 2nd—Mr. R. Baker, Gamston	19
Archduchess 5th—Mr. R. Baker, Gamston	21
Nicolina 2nd—Mr. Tomlinson, Cowthorpe	23
Hamphwaite 2nd—Mr. Loy, Aislaby, Pickering	16
Washburne 2nd—Mr. Ellis, Thurnscoe	10
Tilla 2nd—Mr. Tennant, Selby	9
Miss Pyrgo 5th—Mr. Botterill, Driffield	9
Heifer calf, by Shuttlecock, 3 days old—Mr. Tennant, Selby	5

The total amount realised was £1,331 8s. on 41 animals; showing an average of £32 8s. 9d. per head, including young calves. Taking the animals above six months old, the bulls average £69 13s. 4d. each, and the cows £29 8s. each. The young bull-calves between two and four months old averaged £26 17s. each.

THE BERKELEY CASTLE SALE OF SHORTHORNS.

On Friday, March 11th, by Mr. JOHN THORNTON.

This was inaugurated by Mr. Thornton as the first of a series of periodical sales. Many of the young bulls were the produce of cows from the herds of Messrs. Bowly, Rich, and Holland, their sires being of the Bates' blood. The cows and heifers were principally bred from Yorkshire dairy cows, purchased some years ago in Darlington, and since crossed with pure-bred bulls. Some few of the lots were the property of Lord Ducie and Sir John Rolt. The prices were altogether better than had been expected.

BULLS.

Artern (25531), white, calved May 10, 1867, by Lord Jersey (20185), out of Rose of Dumbleton by Duke of Cleveland (15924).—Mr. Cooke, 36 gs.

Baron Waverley (25592), red, calved Oct. 12, 1867, by Thirteenth Grand Duke (21850), out of Flora Melvor by Third Duke of Lancaster (19624).—Mr. H. Mousell, Gloucester, 47 gs.

Bacchus, white, calved Jan. 23, 1869, by Falconer (23907), out of Bergamot by Capid (14359).—Mr. N. Combe, Salisbury, 23 gs.

Lord Curzon, whith, calved Feb. 5, 1869, by Grand Duke of Glo'ster (19882), out of Lady Howe by Earl Howe (17768).—Mr. B. Cox, Salisbury, 24 gs.

Beadigo, roan, calved Feb. 7, 1869, by Artern (25531), out of Barbara by Lord Hardinge (20177).—Mr. Harding, 26 gs.

Colonel Jones, roan, calved March 6, 1869, by Artern (25531), out of Butterfly by Lord Hardings (20177).—Mr. Todd, 25 gs.

Duke Farewell, red, calved March 20, 1869, by Second Duke of Collingham (23730), out of Ursula 12th by General Carrobert (12927).—Mr. J. Pybus, Portakewet, 50 gs.

Zee, roan, calved April 8, 1869, by Falconer (23907), out of Zee by Prince William (20607).—Mr. J. Carp, Trowbridge, 37 gs.

Hardinge the Dane, rich roan, calved May 24, 1869, by Third Duke of Waterloo (23801), out of Musical 11th by Seventh Duke of York (17754).—Mr. A. W. Harrison, 28 gs.

Jagurtha, white, calved July 10, 1869, by Falconer (23907), out of Numidia 3rd by Duke of Lancaster (19624).—Mr. Harris, 25 gs.

Paganini, red and white, calved July 31, 1869, by Baron Waverley (25592), out of Peggy 3rd by Grand Duke of Glo'ster (19882).—Mr. Smith, 16 gs.

Lord Chief Justice, red and white, calved Aug. 16, 1869, by Second Duke of Collingham (23730), out of Rose of Glo'ster by Capid (14359).—Mr. R. Barton, 41 gs.

Harold, red and white, calved Dec. 11, 1869, by Sixth Earl of Walton (26078), out of Musical 12th by Seventh Duke of York (17754).—Mr. W. Till, 15 gs.

COWS AND HEIFERS.

Lady Howe, white, calved Jan. 8, 1865, by Earl Howe (17768), out of Droophorn by Prince Alfred (13494).—Mr. Ford, 23 gs.

Mirabelle, white, calved Dec. 23, 1865, by Lord Jersey (20185), out of Mulberry's Butterfly by Master Butterfly 5th (14921).—Mr. Clarke, 40 gs.

Bonny Lass, red and white, calved April 5, 1866, by Grand Duke of Glo'ster (19882), out of Annis by Prince of Orange (18620).—Mr. W. Butt, Stonehouse, 27 gs.

Lady Oxford 3rd, roan, calved Nov. 10, 1866, by Lord Hardinge (20177), out of Lady Oxford 1st by Marquis of Oxford (18339).—Mr. G. Hooper, Newport, 26 gs.

Duchess of Glo'ster 5th, roan, calved in Feb., 1867, by Prince of Wales (27188), out of Duchess of Glo'ster by Harry of Glo'ster (14674).—Mr. Butt, 23 gs.

Victoria, roan, calved in Feb. 1867, by Prince of Wales (27188), out of Nina by Trajan (12238).—Mr. Cox, 32 gs.

Vivian, roan, calved in March, 1867, by Prince of Wales (27188), out of Valentine by White Duke (19142).—Lord Fitzhardinge, 28 gs.

Lancaster 21st, roan, calved April, 1867, by Prince of Wales (27188), out of Lancaster 14th by Monarch (13347).—Mr. Cox, 30 gs.

Celia, roan, calved March 20, 1867, by Grand Duke of Glo'ster

(19882), out of Beauty by Lord Hardinge (20177).—Mr. Pitcher, 30 gs.

Capiscum, red and a little white, calved March 21, 1867, by Grand Duke of Glo'ster (19882), out of Bellflower by Lord Hardinge (20177).—Mr. Harrison, 31 gs.

Beauty, roan, calved March 22, 1867, by Grand Duke of Glo'ster (19882), out of Agnes by Prince of Orange (18620).—Mr. Surman, 23 gs.

Crocus, white, calved April 4, 1867, by Grand Duke of Glo'ster (19882), out of Blossom by Lord Hardinge (20177).—Mr. Hooper, 33 gs.

Bigg Bess, roan, calved April 6, 1867, by Grand Duke of Glo'ster (19882), out of Alma by Prince of Orange (18620).—Mr. Bennett, 26 gs.

Lady Oxford 4th, roan, calved November 20, 1867, by Lord Hardinge (20177), out of Lady Oxford 1st by Marquis of Oxford (18339).—Mr. Hooper, 26 gs.

SUMMARY.

	Average.	Total.
13 Bulls	£31 14 10.....	£412 13 0
14 Cows.....	30 4 6.....	423 3 0
		£835 16 0

27 Averaged £30 19 1

THE GAME LAWS.

A meeting as called by Mr. McGeachy, was held in Birmingham, at which Mr. T. Prime, the mayor, presided. Amongst those present were many tenant farmers.

Mr. McGEACHY, in an able address, put the following resolutions:

1. "That the existing Game Laws are detrimental to the community at large, and in a high degree injurious to the social and moral well-being of the nation."

2. "That they greatly lessen the productions of the land, and are at present the greatest existing obstacle to the development of agriculture."

3. "That, as the grievance is a national one, it is the duty of the nation, through its representatives in Parliament, to devise, in their wisdom, a sufficient and lasting remedy."

Mr. JAMES BALDWIN seconded the motion, which was carried with only one dissentient.

A committee was appointed to carry out the views of the meeting.

THE RABBIT PLAGUE.—It would be superfluous to dilate on the nuisance which rabbits must needs be to the tenant-farmer, eating up his young blades of grass, and his corn as it appears above the surface. If he be a hop-grower, he is doomed to feel their devastating influence in his hop-yard, or hop-garden also; and, in short, the tenant who could look calmly and complacently, we do not say upon a rabbit-warren in his immediate neighbourhood, but upon the toleration and keeping up of rabbits in his hedge-rows and the adjoining coverts, might be safely set down as a thriftless and insensate dullard. There is every excuse, therefore, for the almost unanimous clamour which the tenant-farmers are raising—not a whit too soon—against this fertile source of loss and disappointment. In whatever light a landlord may regard them, in the tenant's eye rabbits are and must be vermin. And the speedy recognition by landlords of the tenant's view upon this matter might not improbably avail to stay or stave off, indefinitely, a further agitation about the Game-laws.—*The Saturday Review.*

MESSRS HOWARD'S WORKS AT BEDFORD.—Some time since Messrs. Howard determined to devote the present large foundry to the fitting and wrought-iron department, and to erect a new foundry on a much larger scale by the side of the old one. Some competent judges have pronounced this to be the most complete, the best planned, if not the largest foundry in the United Kingdom. There are no less than 35,000 square feet on the ground floor. There are four huge cupolas or furnaces capable of melting 300 tons per week, which are expected to be very shortly in full work. The arrangements were planned by Mr. James Howard, M.P., the erection being under the direction of Mr. Usher, architect, of Bedford.

THE CENTRAL CHAMBER OF AGRICULTURE.

A meeting of the Council of the Chamber of Agriculture was held on Tuesday, March 8, at the Salisbury Hotel, Colonel TOMLINE, M.P., in the chair.

Sir MASSEY LOPES, M.P., as Chairman of the Local Taxation Committee, presented the following Report, which was adopted:—

"The Local Taxation Committee, in presenting their report, have much pleasure in stating that the prize essay has now been published and is in circulation. More than 5,800 copies have been disposed of, of which number 2,000 copies have been sent gratuitously to the members of both Houses of the Legislature, to the editors of the principal London and Provincial journals, to the Chairman and secretaries of every Chamber of Agriculture in the country, to every member of the Local Taxation Committee, and to every gentleman attending this day the Council of the Central Chamber of Agriculture. The committee venture to express a hope that the essay may be attentively read, as they feel assured that much useful information may be gained from it upon a subject which is at present attracting very great interest and attention. It should be clearly understood that the great object of the Committee is to obtain a reform in the present system of levying local taxation exclusively upon income derived from real property, whilst that derived from personal property entirely escapes. It is erroneously asserted that this exemption is balanced by charges on personal property for imperial objects. Mr. Gladstone has adopted this line of argument in the debate of the 21st February on Mr. Goschen's motion for a select committee to inquire into the subject of rating. He is reported to have said, "Real property enjoys exemption which it would not be possible to maintain for a single moment after you removed the exemption of personal property from local taxation. And again, 'Real property in various forms has borne the main part of local taxation, and personality the main part of Imperial taxation.' The accuracy of these statements the committee deny, and they challenge the fullest and most impartial investigation into the real facts of the case. The committee would particularly direct attention to Chapter III. of the Prize Essay, in which this fallacy is fully treated. It appears from Mr. Goschen's speech that the Government have no intention to remove this injustice. All that it is proposed to do is to rate some real property now exempt, such as Government property, metallic mines and woods, and to divide the payment of the rates between owners and occupiers. This will give little or no satisfaction to the large class of freeholders who occupy their own property, more especially those residing in towns. The committee cannot accept these proposals as an equitable and permanent settlement of the question; for the real question at issue is not touched. Some of the Government proposals tend in the right direction, but no prospect is held out of a removal of the great grievance that income derived from personal property should be exempt from local taxation, and this is the question which the Committee consider to be of first and paramount importance. The petition adopted by the Council of the Central Chamber of Agriculture at their last meeting has been printed and circulated, and it is hoped that members of the Council will use their utmost exertions to get it numerously signed in their respective districts. The Local Taxation Committee herewith present their finance account up to the present date, which shows that the funds placed at their disposal are quite exhausted, and that if their operations are to be continued, it is absolutely necessary that they should receive further assistance from the provincial Chambers, as well as from landholders and householders, who are more particularly interested in the object they have in view. The amount that the Council of the Central Chamber at their last meeting resolved to start the subscription list with for the new year, was £50, while two gentlemen (Colonel Tomline, the chairman of the Central Chamber, and the chairman of the Local Taxation Committee) have each offered similar amounts, trusting to be met in like manner by other landowners. The committee have much pleasure in making this announcement,

and take this opportunity to offer their thanks. A financial statement of the expenditure of some £200 was given here.

"The proposal of the Government to add to the already-increasing burden of local taxation by a new rate for national education is one to which the committee would specially direct the attention of the Council. Should this scheme be adopted, it would impose a novel and very serious addition to the grievances which at present exist. The committee consider themselves fortunate in being able to announce that they have secured the services of Mr. Gardner, the writer of the prize essay, as secretary."

A long and desultory discussion ensued with regard to the points to be submitted by the malt-tax deputation to the Chancellor of the Exchequer, the result being the adoption of a memorial, as prepared by the Business Committee, that will be found in another column. It was also resolved that the following should address the Chancellor—an arrangement, however, that was not adhered to: Mr. James Hudson, Mr. Jasper More, Mr. John Helmaley, Mr. May, Mr. H. Biddell, Mr. Isaac Seaman, Mr. J. Whitley, and Mr. Rowley.

Professor LEONE LEVI then proceeded, at the request of the Chairman, to make a communication from the International Decimal Association on the question of weights and measures. The Association had laboured for many years for the purpose of securing if possible an assimilation of the weights and measures of different countries, including those used throughout this kingdom. In 1863 a Committee of the House of Commons resolved unanimously that the best mode of attaining that object was the introduction of what was called the metric system, which obtained to a very large extent on the continent of Europe, and had been recently adopted in India. The Act of 1864 made the adoption of that system in this country permissive, and not compulsory; but very recently the Standard Commissioners had made a Report in which they recommended the further legislation of the system, and there now seemed a fair prospect that sooner or later it would be established in this country. The sale of corn in England, Scotland, and Ireland varied very considerably in different markets and places; and only the other day a return was obtained by Mr. Sheridan of the reports of the inspectors of corn in various markets, and from which it appeared that a large number of different weights and measures are still in existence. The Decimal Association had received from farmers' clubs and local chambers of agriculture communications which showed that they have had this question under their consideration, and those bodies had asked them for, and had received, information with regard to the metric system, which in their opinion was the best system that could be established in lieu of the present variations. At present there were great and most inconvenient differences in weights and measures, not merely between different counties, but even between different parts of the same county; and the importance of the subject could no longer be disputed. His purpose in coming before the Council was to ask it to appoint a select committee to consider this question. The Association thought that the subject should be brought before Parliament as soon as was practicable. Sir Charles Adderley, Mr. J. B. Smith, and other members of the House of Commons would be very happy to introduce it, but it was considered far better that it should be brought forward by members who were connected with the Chamber of Agriculture, and who would therefore be able to express the feelings of the agricultural community in respect to any change. He trusted that the Council would concur in an appeal for the appointment of a Committee of the Lower House to inquire into the whole question, of course without binding itself to any specific course of subsequent action.

A vote of thanks was passed to the Association represented by Professor Leone Levi for the communication which he had made; and the matter was referred to the Business Committee.

The Rev. E. LACON WILLES, of the Leicestershire Chamber, moved the following resolutions: "That the Elementary Education Bill merits the support of this Council, inasmuch

as it aims to secure a sufficient amount of public school accommodation throughout the kingdom and to maintain a good standard of efficiency in schools; but this Council considers that adequate opportunities for instruction may be secured by regular attendance at school up to the age of ten years, supplemented by partial attendance after that age, and that compulsory attendance of children up to the age of twelve years would prove a great hardship to the labouring classes." The other day he performed a similar task in the Leicestershire Chamber, and the following resolution was adopted: "This meeting is of opinion that the Education Bill now before Parliament is a just and liberal measure, and that, subject to certain modifications which it is hoped will be introduced, it is likely to conduce to the best interests of education and the welfare of the country." That resolution exactly expressed the opinion which he held himself. It was perhaps unfortunate that the Business Committee entrusted that question to one who belonged to the somewhat-maligned body called parsons; but he must say, notwithstanding anything which might have been stated to the contrary, that the clergy, especially in the country districts, accepted with the greatest thankfulness the bill proposed by Mr. Forster. They considered it a just and liberal measure, and for this reason, that it had regard to the past. He did not know where the country would be now if the clergy had not put their shoulders to the wheel in reference to education. He felt great respect for the two associations which were agitating the country on that subject, and believed that they had done much good to the cause of education; but he could not help thinking that it would be rather hard if the labours of the last thirty years were cast aside. £14,000,000 had been spent on education during that period, almost in spite of the Government and the Legislature. Nothing could be more niggardly than the public grants made to schools; but, notwithstanding that, the clergy had, with the assistance of many of the laity, built up a great work, and it would have been a reckless waste of force to have destroyed that work, or to have alienated those who were engaged in it. A far larger proportion of the children of the country had been educated or were being educated in the schools to which he alluded than many persons seemed to suppose. Now, there were many things in the Bill which must come home to the minds of those whom he addressed. He would first allude to what he believed to be the objections to Mr. Forster's measure—objections which he thought should be strongly urged upon the Government at the present time. The chief point which concerned the agricultural interest was that by this Bill the Government were throwing upon the occupiers of land a prospective burden of no ordinary character. As he understood the matter, the bill provided that if at the end of this year schools should be found wanting in suitability for the object, or not sufficient to secure it, then, under certain restrictions, the burden of providing proper schools might be thrown upon the rateable property of the neighbourhood. Did they as occupiers of land consider it fair that those burdens which ought to fall in a large proportion upon the owners of land should in future be thrown upon occupiers? For his own part, he could not conceive what had induced so wise and just a man as Mr. Forster to propose such a thing as that, unless it were that this would be the last straw that would break the camel's back, and that such an arrangement must inevitably lead to a revision of the whole system of local burdens. Then, again, there was the question of compulsion. That was a point on which, no doubt, many persons present felt very strongly. There was one part of the bill, relating to that matter, which seemed to him utterly inexplicable; he meant that part of it which provided for what he might call an optional compulsion. Let him give a case by way of illustration. "A" was a country parish, which had been found on inspection to have sufficient school provision, and was therefore left alone; while "B" was a neighbouring parish where the provision had been pronounced inadequate, and where in consequence attendance at school was made compulsory up to 13 years of age. How would it be possible for the two systems to stand side by side? He asked them as practical men whether such a state of things could continue. He, for one, would rather see absolute compulsion put in force in every parish, than a half and half system which would produce heart-burnings through the length and breadth of the land. Of course any system of compulsion must tread, as it were, on many people's toes, and he confessed

he did not see how any great comprehensive measure was to be carried out without compulsion. It was not just to the hard-working labourer, who made sacrifices in order to send his children regularly to school, that his dissolute neighbour should be allowed to leave his children to grow up in the gutter. Parliament must interfere to remove a great moral pest, and he thought agriculturists would be ten times better off under absolute than under partial compulsion. He believed that a solution of this difficult question was to be found in the Report of the Commission on agricultural labour, which was issued last year, showing, as it did, how due provision for education might be combined with a proper regard for the earnings of children after a certain age—in other words, how children might be protected against the selfishness or cruelty of their parents. He thought there should be established in the country districts a kind of indirect compulsion in accordance with the resolution which he was proposing, that up to 10 years of age children should be prevented from being employed in agriculture, and that after that they should be compelled to receive a certain additional amount of schooling, unless a Government inspector had certified that that was unnecessary. If a child of 10 years of age came up to the fourth standard, there could not be much use in his continuing at school any longer, and he would then have got the means of improving himself; and after all, the proper object of education was not to educate the child completely, but to place in his power self-instruction in after-life. Three months' teaching in the slack time of the year, between the ages of 10 and 13, would in country districts prove in most cases very useful, and he should be very glad to see provisions made for that purpose. As to the great towns, there was no blinking the fact that there was nothing for it but absolute compulsion; but on the other hand, he did not see how any distinction could be made between town and country as regarded the means of supporting schools. As to the religious question, he thought the Government had dealt with it fairly and liberally. There seemed to him to have been just and liberal consideration for the case of those who differed from the Church of England. It was computed that 75 per cent. of the existing schools belonged to that church; and, if that were so, it was far from being a reproach to the Church, though it had been treated as one. These schools were already in existence, and it was but just to regard the past labours of those who started them. As regarded those who differed from the Church, it was surely sufficient to provide that no child should be called upon to learn any doctrine or dogma if the parent had expressed his objection in writing. It was well known that, practically, the religious question hardly ever raised any difficulty in the working of schools. He had held a living in a large parish where the non-conformists formed a majority, and he had also held one in a parish where the Church was predominant, and in neither case had the religious difficulty cropped up. People said that it must do so, but it did not, and he believed it would not do so in future. He did not mean to say that it was not possible for it to do so, for there were silly men among the clergy as well as among other classes of society; but, though he had sometimes heard of foolish clerical intolerance, yet he believed the great body of the clergy had treated and wished to treat their non-conformist brethren with the greatest liberality in regard to education. He was glad that the Government had held their own with respect to the non-establishment of free schools; for he firmly believed that to establish such schools throughout the length and breadth of the land would be one of the most unwise things that could be done. A free school was almost always a bad school. Moreover for the Government to establish such schools would be a great injury to the small industrious rate-payers, inasmuch as a heavy burden would be laid upon him for the schooling of children, while a labourer, who perhaps received a larger sum of money for his support, entirely escaped.

Mr. BUND (Worcestershire Chamber), in seconding the resolution, said that as regarded the question raised by Mr. Willes upon whom the rate should fall, the owner or the occupier, he doubted whether there should be any rate at all. As to the question of compulsion, they all knew that in many parts of the country the children of agricultural labourers were able at ten years of age to contribute a little towards the support of the family, and of course that source of help would be lost if all children were compelled to attend

school daily up to 12. He felt that it was absolutely necessary that some comprehensive education bill should be passed by the Legislature; and he therefore should deprecate a bill like that before Parliament being entirely rejected.

The CHAIRMAN here observed that as the resolution stood, it appeared rather inconsistent with one which was to follow. Mr. Neild suggested that that objection might be met by substituting "as far as" for "inasmuch" at the commencement, and with consent of the mover the resolution was altered accordingly.

Sir MASSEY LOPES, M.P., regretted that the introducer of the subject had referred to the religious difficulty. The Chamber had, in fact, nothing to do with that difficulty; the question before it being simply how education was to be secured, and whether attendance should be made compulsory or not. If they discussed the religious difficulty they were not very likely to agree. He felt strongly upon it himself, but would not enter into it then.

Mr. YOUNGMAN (Essex), did not think the religious question should be burked. Many persons in the agricultural districts were strongly opposed to denominational schools being supported out of rates. To his mind it seemed a terrible fact that many dissenting parents having sent their children to schools belonging to the Established Church, those children had been taught to say there that by baptism they were made members (Cries of order).

The CHAIRMAN observed that such remarks were not within the terms of the resolution.

Mr. RIDLEY, M.P. (Northumberland), said that the North of England Chamber which he represented on that occasion had passed a resolution expressing a general approval of the Government Bill. As to the religious difficulty it was not known in Northumberland. One good advantage, he thought, of the Bill was the elasticity of its provisions. In Northumberland they would protest most indignantly against being called upon to establish school boards in districts where they were not required; but that would not be the case under this Bill. In this district they courted investigation into the state of the schools, but they would strongly object to an establishment of the maintaining of a school board without proved necessity. The definition in the Bill of a parish as a place where a separate poor rate was levied would introduce great confusion in Northumberland. In many cases it might have the effect of making one man a school board in himself. In that county they also entirely objected to there being any restriction as regarded age; thinking that if a child had attained a certain standard of education he should not afterwards be obliged to attend school (Hear, hear).

The Rev. E. SMYTHIES said he could not join in the general chorus of praise with regard to Mr. Forster's Bill. He admitted that in many respects it was a good Bill, but there were serious defects. Existing schools which had deserved well of their country were to be left alone, and were to continue to be supported as to one-third by the children's pence, another third school grants, and the remaining third by voluntary subscriptions. But what was to be done in parishes where there were no voluntary subscriptions, or almost none? Supposing the total annual expense to be £200 and £300 to be supplied by the children's pence and £30 more by the Government, how was the difference to be made up? There were many parishes in that position in which the burden fell almost entirely on one individual, that individual being the clergyman. For many years he had had a school in his parish where there had been carried out from the first a most stringent conscience clause, and yet there has been scarcely any voluntary subscriptions. He could corroborate from observation what Mr. Willes said about the inferiority of free schools. He believed that, as a rule, the worst attended schools were those which were free. As to the religious difficulty, it was the greatest sham ever palmed off on the country.

Colonel BRISK, M.P., expressed his regret that any restriction had been put on the discussion of the education question. In his opinion, it was far better that gentlemen who differed should have an opportunity of expressing their differences.

The Rev. Mr. JACKSON (Wisebeach) agreed with previous speakers in expressing gratitude to the Government for their Bill. He would like to know, however, how a compulsory rate would bear on the poorer class of rate-payers. As the manager of a school, he found that it was materially supported by that class. Many of them paid not merely a penny or two-

pence, but fourpence or even sixpence a head, and if they were compelled to pay a 3d. rate in addition, for the benefit of others, there might be a difficulty in making the two ends meet. Were such men to be fleeced when they were doing so much for their children? Again, he objected to a 5s. fine being imposed on the labourer. If a fine was to be inflicted at all, yet it should be on the occupier who employed the labourer's child; but he doubted the policy of fining any one. He also objected to the giving tickets to the indigent poor. It would be impossible for a school manager to draw the line between those who were and those who were not indigent. There would no doubt be numerous applicants for free tickets, and he feared that what the labourer did not pay for he would not value. Another blot in the bill was that it did not try to stimulate education by rewards, being altogether penal. In the middle-class and public schools there were scholarships which opened a path to the University, and he wanted to see the labourer's children stimulated in a similar manner. He should be glad to see the bill passed if it was properly amended.

The resolution was then put, and carried unanimously.

Mr. ARTHUR STARTIN (Warwickshire Chamber) then moved the following: "That, giving school boards power to borrow money to be repaid out of local rates, and power to levy a rate of threepence in the pound, would be increasing an injustice already inflicted upon the owners and occupiers of rateable property; and this council considers that, as the education of the people is a national object, the whole of the public contribution should come out of the general taxation until there has been a complete revision of the present system of rating." He said, it being now universally admitted that education was a national benefit, it followed that the funds for promoting it should come from a fund to which all contributed. The amount charged to the poor-rate was only about one-sixth of the total income of the country; and could it be just to impose an additional burden on such a limited area? He thought the time had come when a strong resistance should be offered to these continual additions to local taxation under the head of poor-rate. Mr. Gladstone said that the rating system was so exceedingly convenient that it would be unwise to touch it; but that was done by these additions to it. He (Mr. Startin) would say, therefore, let them not be contented with scotching the snake, but let them kill it. It was no more the duty of a particular parish to provide a school out of rates than to provide a barracks or the defence of the country. Public duties of that kind should be performed by a Minister of the Crown responsible to Parliament.

Mr. GENCE ANDREWS, in seconding the resolution, said they had before them in that case not merely a charge for education, but the threatened introduction of the thin end of the wedge, which would be afterwards extended in other directions. He did not know exactly what 3d. in the pound would amount to, but he would put it down at £1,000,000, and that would be in addition to £12,000,000 already raised under the name of poor rate. Altogether, with the contemplated abolition of tolls the charges on the land would amount to about £17,000,000 upon an annual income of £100,000,000. This proposal to levy an education rate was directly in the teeth of resolutions of that Chamber, which had declared over and over again that it would oppose to the utmost any attempt to impose addition to the burdens under the head of poor-rate assessment. After all, primary education was only a means to an end. Efforts must afterwards be made to educate the boy until he became an adult; otherwise the labourers would be under the influence of the conductors of the cheap press, who taught that there was a necessary antagonism between capital and labour, between master and man (Cries of "Question").

Mr. T. ARKELL, of the Swindon Chamber, in supporting the resolution, read a resolution of his own chamber, to the effect that the Government Bill unduly interfered with the existing system, and that it would destroy voluntary school management.

The Rev. E. LACON WILLES said that, if the Chamber sanctioned that resolution, it would do what tended to shut up every voluntary school in the country; for the resolution declared that education should be supported entirely out of the "general taxation." Was the Council prepared to endorse the principle that they should forego all local effort and management, and have a central board directing the course of action throughout the length and breadth of the land?

Mr. HUSON (Worcestershire Chamber) supported the resolution. The real property of this country was already taxed to an abominable extent; and every Chamber of Agriculture ought to resist any attempt to increase its burdens until every kind of property bore its fair proportion.

Mr. MARTIN (Cambridgeshire Chamber) read a resolution of his Chamber in accordance with that before the meeting.

After some further discussion, in which Mr. Youngman, Sir George Jenkinson, M.P., and Major Paget, M.P., took part, the latter observing that he thought the objection raised against the bill was not directed against voluntary subscriptions, but against the levying of any additional rate until there has been

a complete revision of the present system of rating, the resolution was adopted.

On the motion of Capt. Cragie, seconded by Mr. C. Bramley (Lincolnshire), the further discussion of the subject was adjourned to the Council meeting on April 5; the mover having explained generally that the object of the adjournment was to watch the progress of the Bill and take steps accordingly, it was suggested that copies of the resolutions just passed should be forwarded to the Government, and this suggestion it was understood would be carried out.

A vote of thanks was given to the Chairman, and the meeting then separated.

IRRIGATION.

At a meeting of the Dorchester Farmer's Club, Mr. John Homer in the chair, Mr. RICHARD GENGE, the vice-chairman, read the following paper on Irrigation:

You are probably aware that a few months ago one of our county gentlemen notified to his tenants that he would offer prizes, to be competed for by watermen on his estates, to be awarded to the men (if I remember rightly) who had their weirs, hatches, mairs, drains, and meadows generally in the best condition. Whether any entries have been made for these prizes, I am not aware. Practically there may be some difficulty in making the competition fair to all, as some meadows may possess more natural advantages than others. But I think the offer on the part of the landlord showed that he was well aware of the great value of water meadows, and was anxious, as far as he was concerned, to encourage the greatest amount of skill and attention in their management. This gentleman's proposal gave me the idea that we may, perhaps, not unprofitably devote an evening to the subject of irrigation; and although it may be a dry one to those present who are not fortunate enough to possess water meadows, still even they may ask themselves the question whether they make the most of the fertilising properties of the water they happen to have at their command? Irrigation, derived from the Latin *irripo* (to water), has been aptly described as a method of probing or increasing fertility in soils by an artificial supply of water. It was probably first resorted to in countries where much of the land must have otherwise remained barren from drought, as in Egypt, where it was extensively practised 2,000 years before Christ, and where great systems of canals and artificial lakes were formed for the purpose. Extensive works, intended for the irrigation of large districts, existed ages ago in Mesopotamia, Persia, India, China, and some other parts of the East; and in such of those countries as have not entirely lost their ancient prosperity, such works still remain. In many parts of the world the necessity of irrigation is so strongly felt, at least at some seasons of the year, that the agriculture of even comparatively rude tribes depends on the facility with which it can be accomplished. Some plants also require a very abundant supply of water, and irrigation has become general where their cultivation prevails. This is particularly the case with rice, the principal grain of great part of Asia. Irrigation is supposed to have been introduced into Britain by the Romans. In Europe it prevails chiefly in the south, and is most extensively practised in Lombardy, in some parts of Spain, and of the south of France. The extent of irrigated land in the valley of the Po is estimated at 1,600,000 acres, and the increase of rental thus caused at £830,000. In our own country, and in most parts of Europe except Lombardy, irrigation is principally employed for the purpose of increasing the produce of grass, by converting the land into water meadows; but it is far from being so largely practised as seems desirable. Poor heaths, by water alone, have been changed into luxuriant meadows. The extent of water meadows in England is stated to be not more than 100,000 acres. The irrigation of land with the sewage water of towns is, under another name, the application of liquid manure; but it is not my intention to dwell this evening on that branch of the subject, although it is most interesting. The utilisation of sewage is a great, I may truly say, a national question. It has been most successfully adopted near Edinburgh, where an extensive tract of meadows yields a rent of £20 to £40 per

acre. The grass is cut from three to five times a year, and as much as 10 tons an acre have been obtained at a cutting. It is practised in various parts of England; amongst others in Nottinghamshire, Staffordshire, at Bedford, Croydon, and also at the Lodge Farm, Barking. A report of the sewage culture at the latter place has lately been published by the Hon. W. Petre. Fifty-three acres have been sown with Italian ryegrass, and between September 1st, 1868, and September 1st, 1869, it yielded more than 1,800 tons. One plot, a little less than two acres, gave in three cuttings 45½ tons; one and three quarters acres of white onions have realized over £67 for the plot. The crop of winter oats has produced 11 qrs. to the acre by the application of 1,000 to 1,200 tons of sewage. During the year 360,000 tons of sewage have been sufficient to render highly productive 120 acres of the Lodge Farm. The value of the crop, in the gross, grown with 360,000 tons of sewage, is over £3,200. In no small degree the water of rivers and of springs depends on its organic and mineral constituents for its fertilising properties, so that the application of it is not in principle different from that of liquid manure, but it must be borne in mind that the mere abundance of water itself is of great importance, as the most nutritious substances brought in contact with the roots of plants are of no use to them unless in a state of solution. Water, you are aware, consists of one part by weight of hydrogen, united to eight of oxygen; but Professor Johnston says, "In nature water never occurs in a pure state; it generally contains both gaseous and saline substances in a state of solution; and this, no doubt, is a wise provision by which the food of plants is constantly renewed and brought within their reach." The water that is used for irrigation should be free from mud and such impurities as mechanically clog the pores of leaves, or cover up the hearts of plants, and interfere with their growth. It is a commonly received opinion that the elementary food of plants is contained in a state of solution in water, and that no plant can exist without a supply of it in a greater or lesser degree. Without some degree of moisture the roots of grass become withered and perish, and too great a depth of it over them is equally fatal to their existence. Stagnant water on grass land encourages the worst, and kills or discourages the best, kinds; water in motion, whatever the depth may be, is less injurious than if quite at rest, and the shallower the current and quicker its motion over the turf the more the grass is excited to luxuriant growth. It may be observed that heat, air, and light are indispensable agents in the development of plants. If they be kept in a low temperature, secluded from fresh air or in darkness, they are inactive or languish and die. Applying these facts, whilst considering the effects of irrigation, we may safely conclude that the energies of the plants are excited by being defended from the chilling night air, whilst they enjoy a higher degree of heat generated by the motion of the current, and at the same time are not excluded from the direct action and benefit of the light of the sun; nor can the thin covering of agitated and rippling water be said to deprive the grass of the necessary portion of air. Before proceeding to the more practical part of my subject I will, with your permission, make use of an extract from a most interesting paper by Mr. James Howard, M.P., on "Farming and Peasantry on the Continent." He says: "Some four years ago I spent a few weeks in Egypt. I was so impressed with the astonishing results obtained by the simple application of water to land, in

the valley of the Nile, that I came home under a strong conviction that in England, notwithstanding the difference between the two climates, we do not reap half the advantages we might do from the water which a beneficent Providence sends us. By the aid of very primitive pumps, worked by a mule, or a bullock, or a couple of donkeys, sufficient water is often raised by the Egyptian farmer to irrigate 30, 40, or 50 acres of land, which fields produce prodigious crops of a kind of clover called 'burseem.' My recent visit to Italy and Switzerland has confirmed me in this opinion. I am aware that water meadows in England are almost as old as the hills. The practice of irrigation is, however, confined to very few localities—not one farmer in 500 in England, I venture to say, knows anything of the subject, or has ever given the matter serious consideration; and I believe there are reasons which have produced the indifference for which I think the State is in great measure answerable. The practice of irrigation in Europe is carried out on the greatest scale, with probably the best results, in the plains of Lombardy and Piedmont. In Lombardy, out of an area of 6,000,000 acres, upwards of 1,000,000 are artificially irrigated; upwards of 3,000 miles of main or minor canals have been cut in the province, besides a vast extent of small arteries in the hands of private individuals. Although some of the main canals are used for purposes of navigation, they are mainly constructed with a view to a comprehensive plan of irrigating the country. The Grand Canal, which brings the water of the Ticino to Milan, has been in existence some 700 years, and for this long period has the practice of irrigation been carried on. I would also remark in passing that for almost a longer period a portion of the sewage of Milan has been utilised—I believe the credit is due to the monks of the monastery of Chiaravalle. I visited some of the fields that had been irrigated for centuries, and, although not furnished with all the modern appliances to be seen in the irrigated fields at Bedford, the results are most satisfactory. I may mention that at Bedford the growth of Italian ryegrass, by town sewage, is a most complete success; as many as six crops have been raised this year (1869). I visited an irrigated farm of 90 acres near Milan, rented by a M. Antonio Monti, at which the water is used eleven times over from the point at which it reaches his farm to where he parts with it to his neighbour. The rent of the farm is about 64s. per acre, which is considered low. The grass I saw growing was twenty-four days old, and was fit to cut. Seven crops had been previously mown since the commencement of the year. A good deal of the arable land is susceptible of irrigation. After a wheat crop cabbages are planted. The wheat in one field I saw was cut on June 24. On July 7 the cabbages were planted, and on 24th August (the day I was there) the ground was completely covered. The land was irrigated once before the cabbages were planted, and once after. M. Chizzoline, who is an engineer by profession, and also a landed proprietor and farmer in the neighbourhood, employs a centrifugal pump, driven by a portable engine, for pumping back the water when it has reached the lowest part of his farm—a plan with which he is well satisfied. The watered plains of Lombardy present a most rich and luxuriant appearance. In Switzerland, Mr. Howard says, "Everywhere along the hillside are to be seen devices for catching and spreading the water on the grass slopes; then again it is arrested on its way to the valley and turned over the meadows and fields of maize; indeed, as the fertility of the country depends on the utilization of the water, every little stream is turned to the best account." He afterwards observes, "I believe no gentleman present will differ from me in the opinion that if upon a given portion of land, especially if friable soil, he could always command a supply of water for irrigation, a larger quantity of green food could be raised, and, if so, it would furnish the means of keeping a greater number of animals. Along one valley, where water is to be obtained at a few feet from the surface, a centrifugal or chain pump, worked by a horse or an engine, would supply water for scores of acres." Gentlemen, I owe you an apology for having quoted so much from Mr. Howard, but his paper is so exceedingly interesting that I would recommend any one who has not read it to take an opportunity of doing so. Whether his deduction with regard to irrigation are practical we may well inquire. To a certain extent in some localities they undoubtedly are; but in parts of this district, depending, as many of us do for our water supply on springs, which become so exhausted after a dry summer that I have

once known them not overflow till the month of February following, I do not think it would pay to erect even a donkey engine to pump water to the higher parts of our farms, although it would be most delightful to be able to give our parched soils a supply of moisture during the hot weather; but we could not afford the water. Gentlemen living on the banks of the Frome may be tempted with advantage to help themselves more freely to its waters; but then, perhaps, some unhappy miller would feel himself aggrieved; and this is a point which is well worthy of a passing notice. Water-mills on a stream are frequently a great nuisance, and I question whether the rent they pay is not often more than balanced by the injury they do the meadows both above and below them—in the one case by penning the water, and causing it to be stagnant on the land, and in the other by preventing its being used freely and advantageously for purposes of irrigation. I have been advised that £500 per annum would pay the rent of all the water-mills between Maiden Newton and Wareham. Could not the beneficial results of their removal be reckoned by thousands? And where, let me ask, can landed proprietors find a better or more paying investment for money than in the improvement of water meadows? I agree with Mr. Howard, that hundreds of acres of extra water meadow could be made by a judicious outlay of capital, whilst much of what is now imperfectly irrigated or badly drained might be made doubly productive. Are the Fordington meadows, which we sometimes see so productive of docks, &c., rather than grass, in a creditable state? And another fine tract of land, not many miles away, which unfortunately happens to be "common meadow," would well pay at least 7½ per cent. for capital invested were it enclosed, and the old, and probably doubtful if not obsolete, rights to which it is subject bought up or annihilated. Gentlemen, I need not detain you by detailing the advantages arising from the possession of good water meadows. Water is now abundant, and the crop of grass will probably be good; and, should the severe frost we have lately experienced injure the swedes and turnips, it will be more than usually valuable for early feed. In making a water meadow, two things require the greatest consideration—first, how to get the water on; secondly, how to get it off your land. The size of your ridges or panes must depend on the supply of water, which should be caused to flow gently and evenly over the surface when turned on, and when out the drainage should be sufficiently good to leave the land as dry as possible. With an adequate supply of water, and beds laid out in an uniform manner, there is little trouble in making the whole water well; but with small streams, and where the ridges are irregular in shape and size, considerable care and attention is required to give all the surface an equal share. In such cases the water should be kept together, and not more land irrigated at a time than can be done effectually. Drains and floats or flows should be well scoured, or "taken up," as it is termed, every season where required, by which means the work of irrigation is greatly facilitated. The first flood in the autumn should be taken advantage of. The water may then be allowed to remain two or three weeks on one place, taking care not to shift it when there is a probability of frost. In severe weather all should be flooded that it is possible to get water for. In the spring of the year the water must be frequently shifted. If allowed to remain too long a scum settles on the grass, which prevents its growth, and is very undesirable at any time. The appearance of scum on the grass is a proof that it has had water enough for the time. Gentlemen, I fear that I have intruded too long on your forbearance. Many points of interest in connection with the subject of irrigation will, I trust, be brought out in the discussion. I now beg to thank you for the kind attention you have paid me.

Mr. LOCK: He had always felt that the proper watering of meadows was of the greatest value and importance; indeed that no other branch of farming was more important. Nothing afforded him greater pleasure than the opportunity of improving the irrigation of a piece of land. They would perhaps remember that he had the management of the Fordington meadows, where docks grew a considerable number of years, and that when he left them they were in no slight degree improved. He thought there was much to be done in improving land this side of Wareham; if deep draining were carried out, the landlords joining together to get a good fall, no doubt the land might be rendered very valuable. He concurred with all the observations made by Mr. Genge in the course of his lec-

ture. He should like to see further improvement in the meadows of Wareham neighbourhood; he was satisfied that wherever the irrigation of meadows was properly carried out a good percentage on the amount laid out was yielded. This was a landlord's question, one calling for the utmost attention.

Mr. R. DAMEN had had a little experience in the irrigation of the meadows near Wareham, of which Mr. Lock had just spoken. He could not but think that after water had run through heath country it was deteriorated in quality; he thought that meadows were best when near the spring-head. Water used eight or ten times over was evidently deteriorated, and there must be the greatest advantage in land being near the spring. The water mills were the greatest possible nuisances. He contended that the water used at the mills might be made much more valuable for the purposes of irrigation. The water mills would, he thought, in the course of time, be dispensed with, and steam mills would take their place. Legislation would doubtless before long effect a material change in this respect. Mr. Genge had indeed given them a very nice lecture on a subject which was of the greatest possible importance. Everybody could see that it would be of the greatest possible advantage to abolish the miserable mills; his own experience was not great, but he had had forty or fifty acres of meadow for many years, and during that period he had found those mills to be of the greatest disadvantage; they were sometimes of disadvantage in penning up the water.

Mr. LOCK suggested that the water was of value at the spring-head on account of the fall.

Mr. DAMEN: Something more than that.

Mr. JOHN FOOT spoke on the importance of the proper drainage of land; it was useless, he thought, to attempt to irrigate land unless it was fairly drained where required.

Mr. CHAPMAN SAUNDERS referred to the use of under drainage in taking away poisonous water which was injurious to plants, and he also alluded to the fact that water running through poor land increased in quantity, but was not improved in quality. The subject had, he thought, been very ably introduced. He quite agreed with Mr. Genge regarding the water mills. He at once recognised the desirability of getting rid of them; they were great nuisances. The Legislature would, he thought, take action in the matter before long. The fact that sewage was not utilized as many suggested it should be, demanded, he considered, serious attention. Mr. Chapman Saunders embraced the opportunity of reading the following remarks made by Mr. J. Howard, M.P., as chairman at a recent meeting of the Central Farmers' Club: "Mr. Cadle referred to the important question of the evils which river mills inflicted on a large breadth of land in this country. He thought that in days when steam power was so much cheapened, and when the prices of beef and mutton were so high, it might fairly be said that the time had arrived when the Legislature should deal with that question. Thousands and thousands of acres in this country were water-logged through miserable bits of mills which barely yield a living to the occupiers, and if he continued of the same mind as he was at present he would call the attention of the House of Commons to that subject in the approaching session."

Mr. FOOT suggested that the mills were equally injurious to underground and surface drainage.

Mr. SAUNDERS: If we did away with the mills the land would absorb all the water used there.

Dr. ALDRIDGE said no branch of agriculture was so much neglected as the irrigation of the meadows. It was evident to all that the meadows formed the most valuable part of a farm. The rental was from £4 to £6 per acre, against 30s. per acre for the rest of the farm. It was palpable, then, that the meadows formed the most important part of a holding. To this subject of irrigation greater attention should be paid; if more attention were paid to it he was sure that the land would be very soon doubled in value—instead of realizing £6 per acre it would realize £12. Respecting the sewage question it was still in its infancy; considerable progress had yet to be made. He hoped that ultimately some plan would be adopted by which many valuable manures now comparatively useless would be used for agricultural purposes. He concurred with Mr. Genge respecting the mills. From what little experience he had had himself he must say that there was no greater nuisance, no greater obstacle to the cultivation of the meadows than these mills. Dr.

Aldridge pointed out that in many instances by some inscrutable law the rights of the millowner override those of the landlord and the tenant, the water being turned off at his convenience, whatever the requirements of the landlord or the tenant. Steam being more economical than water for the grinding of corn, it would doubtless be generally adopted before long in all cases where applicable. Water mills would inevitably, he thought, give way in the end to the superior power of steam. He must express his thanks personally to Mr. Genge for the able manner in which he had brought forward this very interesting and important subject. He hoped it would receive the due attention of the club. Before sitting down he would remind them of the danger of putting too much water on the land. They often saw land for days under water; that surely could not be right; it could not promote the growth, or at all events the nutrition of plants. This excessive watering arose probably from a spirit of covetousness.

Mr. LOCK could not fall in with this objection raised by Dr. Aldridge. When he began to drain his meadows he liked to keep it on a fortnight or three weeks without taking it off.

Mr. SAUNDERS: Your meadows have a good under drainage, I suppose.

Mr. LOUX: Yes; I never found any ill effect to arise from the system of retaining the water the time stated.

Mr. SHORTO said previous speakers had set forth the advantages which land derived from being irrigated, and refer once had been made to the mills. Regarding the latter, he had some knowledge of the effect of the mills in the valley of the Avon and the valley of the Frome; he knew that they consumed the greater portion of the water. In order to get rid of the evil pointed out by Mr. Genge he suggested the purchasing of the interest of the mills and the application of the water consumed by them to the meadows. This would be something practical; it was a point to which he desired respectfully to direct their attention. He reminded them that steam was preferable, the action being much more regular than that at water-mills. Regarding the effect of water a friend of his who had some meadows in the neighbourhood of Tisbury, in Wiltshire, told him that they were valuable because close to the spring-head; he said a certain degree of warmth came from the spring-head, and therefore the meadows near there were worth more than the others, the grass being earlier and richer. He paid a visit to the Isle of Man some 35 years ago. He lodged at an hotel at the foot of a certain mountain there, from the top of which issued a little spring. A clever woman—an Irish woman he thought—who kept the hotel, had three or four acres of ground there, and he was surprised one morning to see a great pile of shutes. Before he had been there a month he saw all of them in operation, and he was truly surprised at the effect produced; they were used for watering a garden and an orchard. The shutes were paid for over and over again by the produce. They were shifted day by day, and the effect upon the growth of the plants was really marvellous.

Mr. LOCK could not see that any Act of Parliament was required to do away with these mills. There were only two on the stream between Maiden Newton and Wareham to be purchased; the rest were in the landlords' hands.

The CHAIRMAN desired to offer a few words in closing the discussion. To water-meadows he had been very little accustomed; still he had paid some attention to the subject, and he knew well that they formed an important part of a farm. He knew that they were most valuable in a country such as this, where a great number of sheep were kept. Water-meadows, from what he had seen, were not made the most of. Mr. Homer strongly advocated the laying out of money in improving the irrigation of land, urging that the investment would be amply repaid, landlords and tenants alike reaping the benefit. The outlay would, he thought, be repaid over and over again. With regard to the mills, he quite agreed with what Mr. Genge had so well said. He mentioned the case of a gentleman offering £20 a-year extra rent for the land he occupied provided a mill a mile distant was done away with. The mills, observed Mr. Homer, not only took away the water at certain seasons, but were the means of penning it upon the meadows. There could, he thought be no question about the mills; the meadows would really be worth double their present value if the mills were abolished. The mills were a great nuisance. As for steam-power being used, that was, of course, a separate question; there might be some

little difficulty in applying it in every case. But there could be no doubt that if the mills were done away with, agriculture would be greatly benefited.

Mr. GENGE said: Respecting the quality of the water he thought it a subject of very interesting inquiry; it was one which he should be very glad to hear properly elucidated. He quite thought that water must be considerably affected by the subsoil from which it springs. Having enlarged on the importance of pure water for the purposes of irrigation, Mr. Genge reverted to the question of water mills, mentioning the

case of a miller erecting steam mills close to a railway station and giving up a water mill three miles from the station. Respecting sewage he could not think that in a liquid state it would ever be conveyed to the land in a general way. They had heard of sewage being used on the Edinburgh meadows, but it must be remembered that the very air there was impregnated. The solid matter should, he thought, be extracted, and put in a portable form as was done at Leamington.

A vote of thanks was given to Mr. Genge, and this ended the proceedings.

MARKET-GARDENING FOR FARMERS.

BY A PRACTICAL FARMER.

London, the wonder of the world, contains an immense population, all concentrated within a rather limited area, and looking for their daily supplies from the surrounding country. Many other large populations are contained in our great cities and towns throughout the kingdom. The additional wonder is how they are all fed from day to day. The supplies of bread and meat are generally sufficient, if not abundant; grain and flour are articles of large import, and always forthcoming. Live stock, the producers of our meat supplies, are not so largely imported; but these, together with our home meat aids, are generally found sufficient, and therefore the main requirement of our large populations are provided for. Animal food, however, is too often so dear as to be far beyond the pecuniary means of the industrial population to become a prime article of daily food for their families. They are therefore compelled to resort to vegetables, and to vegetable diets in broths, soups, porridge, and like cookeries. Hence it would appear desirable that more attention should be given upon every suitable farm to the culture of vegetables and edible plants. That these crops are gradually on the increase we readily admit. The growth of potatoes, for instance, as shown by our satisfactory statistical returns, has increased to 43,000 acres over 1868, and 93,000 acres over 1867; and yet this area is only a little more than one-half of the acreage annually grown in Ireland. Carrots continue to be about an average growth, but not by any means sufficiently large in extent, owing, no doubt, to the expensive culture. The cabbage tribe show an increase of 30,000 acres over 1868. Turnips also show an increase; but these are chiefly for stock food, a very small portion being brought into consumption as human food. Of the increase of garden produce we have no separate account, but it is no doubt advancing. There are two or three considerations to be named which ought to induce more attention to the culture of roots and edibles for human consumption—first, the chief monopoly which the home cultivator would enjoy in edibles, and the partial monopoly he would have in the production of roots, as the importations of potatoes and other equally bulky cargo cannot profitably take place unless prices are high in this country; another is, that the industrial population require a far greater general supply of vegetables and edible plants, in order that their prepared foods may be better, cheaper, and more varied; and a third consideration is, the facilities given by railway communication to every market, and the readiness by which all produce is there sold under commission. The farmer's only business, therefore, is to produce the crops and transmit them to market, the commission agent doing all the remaining. It is not every farmer that is qualified to undertake the growth of the many varieties of garden produce in large quantity. It requires a tolerable acquaintance with garden cultivation and garden productions to make much way. There are, however, the common vegetables and edibles which may be grown without difficulty, *i.e.*, potatoes, carrots, turnips, and cabbage in variety, and peas and beans sold green. These may be extensively grown, and will always command a sale. But the smaller kinds, and such as are generally termed garden stuff, require a more intimate knowledge, not only of their habits of growth, but also of garden management. I would enumerate some of the most useful of garden produce which I would propose to cultivate more extensively in the field, in addition to those named above, and where suitable sites can be found on the farm

for their culture, such as asparagus, celery, cress, cucumber, leek, lettuce, onion, parsley, parsnip, radish, rhubarb, spinach. It may appear preposterous to recommend the growth of these many varieties on any given farm, and I think would, in fact, be so; and it is only for the farmer to make his own selection according to his taste and the suitability of his soil and site and the climate in his locality. The best results would most probably arise by the adoption of this course: far better to produce a few things well than aim at doing too much. In making this selection, the farmer must have an eye to the greatest returns. Suppose he commences with an area of early potatoes, he may sow upon them seed for a crop of radishes. These will be marketable almost before the potato plants are above ground. After the potatoes are gone to market, he may plant the same land with cabbage or celery for winter service. This course is not unusual, and if the season is favourable, cannot fail to be profitable. The area in this commencement must be limited so far as the radish crop is concerned, but I know of scarcely any limit to a cabbage or celery crop—the demand is always abundant; and the celery crop, although expensive in management, is a truly profitable one if well got up, good "sticks" making 1½d. to 3d. each. I will just state its culture. Sow a large bed of the best giant celery seed early in the spring. Prepare trenches fifteen inches deep, and three to four feet apart—the further the better for the growth of large "sticks;" these to be well manured with good rotten dung immediately prior to planting. When the plants are ready for lifting, *i.e.*, from four to eight inches in height, take a common garden trowel and lift each plant with a small portion of earth to it, and thus transplant it into the bottom of the trench, and give it and the trench a slight watering, to be repeated as required, and that freely if the season is dry. As the plants attain a fair growth, *i.e.*, from a foot to fifteen inches, they must be gently and carefully moulded up by hand to near the top, taking care the earth does not fall in amongst the stalks to its injury, by causing decay, this moulding to be repeated frequently as the plants grow, all by hand, till near their full growth, when the hoe may be used, if sufficient care is observed. In this way, very fine celery of exquisite quality may be secured, and of great weight per acre. The cabbage should be of the best early garden sorts, and in variety. Every farmer should grow his own plants, so as to be in readiness whenever required. The culture and planting of cabbage is so universally known as to need no repetition here. The varieties are so many, it is superfluous to enumerate. Any respectable gardener seedman will supply the seed correctly to order, and cheaper than they can be grown by the farmer. The preparation of this crop for market is of the simplest kind. They merely require cutting from the top of the stalk, and the trimming off of the outer or large leaves, and packing in the trucks. The celery requires carefully digging from the trenches, so as not to break the stalks. One or two of the loose outer stalks may be taken off, the fibrous roots cut off, and then it is ready for packing in railway trucks, as the cabbage. This is all. We will now take asparagus. This crop requires more care and attention than most ordinary farmers would choose to bestow upon it; therefore none but cautious, careful men should attempt to grow it. It is a profitable crop under good management, and always saleable. The seed should be sown in the spring in nicely prepared soil; in the following spring it will

be ready for planting out. The land should be a fine deep loam, well pulverized and manured. Beds of convenient width should be laid out; and the planting may be done in suitable weather, beginning about the middle of March. As this crop will not yield a return till the second year after planting, a crop of onions may be taken upon the surface in the first year, or lettuces, or radishes, or leeks. It will require cleanly management and every encouragement to bring it into early profit. The cutting in the second year must be limited, but afterwards it will yield abundantly. In preparing it for market, it is desirable to cut it low into the ground, tie it up in bunches, and pack in oblong baskets for the railway trucks. The culture of carrots and parsnips is the same. The land must be perfectly clean, or the seedling plants will soon be choked with weeds, being slow in their early growth. The soil should be a good loam of considerable depth, as these tap-rooted plants drive their roots down a long way for food. The chief management after the plant is up consists in careful hand-weeding. The harvesting is expensive. Strong two-tined forks are usually employed to dig up the roots; and all has to be done by hand—hence the expense. They are usually gaved down till required for market, when they are taken and thrown loose into the railway-trucks. The weight grown in

often very great: hence the profit. These roots are the great competitors with potatoes in the market, but they by no means command the same popularity. It is a pity they do not obtain a higher value with consumers; they are very nutritious and valuable as human food, and ought to be extensively patronized. Rhubarb is a very prolific plant, and is well worth attention on loamy soils. Its culture is the simplest imaginable. It requires a good soil, highly manured; and the planting is generally from off-shoots or divided roots of old plants. The produce is very great; and as it is the earliest plant of the spring, the stalks are in great demand. Lettuce and spinach are well worth a moderate share of attention by farmers, particularly those farming in the vicinity of large towns. The soil requires nicely preparing. The lettuce may be sown broadcast; the spinach is best in rows. These crops may be sent to market advantageously in baskets. The drawing of the lettuce and the cutting of the spinach must be done with judgment as to maturity. The growth of the cucumber can only be profitable on hot soils and warm situations, and such may be found on many farms. As a general farm crop it cannot be grown; but it is worthy attention, and very profitable, where it can be favourably produced.

THE NEW FOREST.—A CHALLENGE.

TO THE EDITOR.

SIR,—The discussion upon the Royal Forests in the House of Commons, brought from Mr. C. S. Read a remark upon the amount of rent I pay the Crown for 430 acres of land—£316 per annum—that is, for rent and interest upon capital expended in improvements by the Crown, at my request. But as the object of the discussion was whether sixty thousand acres of land should be cultivated or not, I am anxious to add a few important facts to his statement, which he could not be in possession of. The staple of many thousand acres round the two farms I hold, four miles apart (mostly planted with fir trees), is as fine for agricultural purposes as is usually found in any county, very superior to that round London, and the climate superior to any I have hitherto met with in any other part of England. The land wants nothing but simple honest farming, by resident farmers. I say resident farmers, because both farms I hold were farmed by the Crown up to the time I took them, and produced, I am told, very little indeed. They now produce heavy crops of the finest grain of all kinds, the finest roots; and growing grass 2 feet 9 inches high was shown at the fat cattle show at Christmas at Mr. Geo. Gibbs' stand dug up from the open field and sent there. I have no objection to show the last year's produce of the New Forest Farms (swedes only excepted, they are eaten), white wheat, red April wheat, barley, oats, both kinds of mangolds and carrots, against the produce of any farm in England, not for a money wager, but for the benefit of the public. The highest quotation for last year's wheat in the London market, on the 21st ult., was 48s. per qr. or £12 per load (being five qrs.); the highest price at Southampton was £11 5s. per load; my last sale-return from Guildford on the 21st was £13 15s. per load. My barley is equally good, but has not yet been offered for sale. My red and yellow mangolds both got second prizes at Birmingham, and my carrots were commended.

The public good I allude to is the poor people scattered about the Forest, who with great difficulty earn a living, and find some resource in the produce of the Forest. They may be driven by hunger—perhaps they are; but there is no doubt cattle and pigs are taken without respect of persons. I have been favoured with the interest they take in my cattle and pigs. I now send out heifers in-calf, instead of Scotch bullocks, and never send out my pigs without a person to stay

with them during the day and bring them home at night. My newly-made hay was taken away with a horse and cart from the field during the night, before it was to be carried to the stack; my wheat was taken from two fields, one at each end of the farm, in the night after it was cut; and there are occasionally prosecutions by the Crown for taking rabbits and pheasants' eggs, and children are prosecuted for damaging trees for firewood. Is it not a scandal, is it not a sin, is it not grievous to see children driven into the forest, to pick up what they can for food and firing, and men half starved for want of work in a country of 60,000 acres of land, capable of growing the finest grain and the finest roots in England, uncultivated; and that because it belongs to the Crown? Had not the Crown better sell the 60,000 acres to be cultivated, employ the increasing population honestly, grow food for them, as well as for the country at large? The Forest, after paying off the common rights in land or money, would realize to the Crown between one and two millions of money, one million of which invested in Consols would produce £32,500 per annum, instead of £1,700 as at present. I feel sure that her Majesty would approve this, and that it only need be placed before her to receive her consent.

What would be about the produce of the 60,000 acres, farmed by individuals who would purchase them? In all probability it would be farmed after this manner: 20,000 acres might be in pasture, 10,000 in wheat, 10,000 in barley, 10,000 in oats, and 10,000 in roots. Ten thousand acres in wheat, 3 qrs. to the acre, would be 30,000 qrs.; 10,000 acres in barley, 5 qrs. to the acre, would be 50,000 qrs.; 10,000 acres of oats, 7 qrs. to the acre, would be 70,000 qrs.; 10,000 acres of roots, 25 tons to the acre, would be 250,000 tons; 20,000 acres of pasture for sheep, etc., produce—to be added by a more competent judge than I am. One sheep an acre for the roots and one sheep an acre for the pasture, would produce annually 30,000 sheep.

If you think these remarks worthy a place in your paper, I shall be obliged by your giving them insertion in my own name and address: I never publish under a feigned one.

Yours truly,

WILLIAM DICKINSON.

New Park, Lymington, March 4th, 1870.

ON THE APPLICATION OF FARM-YARD DUNG.

It has been shown by experience in a majority of similar results, which are very sufficient to establish a fact for practical use, that farm yard dung in a fresh condition from the cattle yards and the doors of the cow sheds is fully equal, if not superior, in effect to the same quantity of straws and feces that has been fermented in a heap, and passed the half putrescent state of decomposition. Placed in the turnip drills in the usual quantity of application, the fresh feces have shown a superiority in effect to the fermented heap, and served in the required change of soils and climates to establish a fact. In order to secure a complete covering of the fresh dung in the drills, it is necessary to cut all the straws that are used for litter into short lengths by the power of the steam thrashing machinery, which will confer an intimate mixture of the straws and feces, with a thorough impregnation of the earthy matters with the urinary fluids. A very moist condition must be maintained, completely saturated, without very large droppings of moisture.

It has been incontestably proved that rough strawy dung from the cattle yards and stable doors is the best manure for wheat, after the fresh and wholly unfermented matters have lain on the fallow lands, exposed to the alternations of rain and dry weather, heat and cold, sun and wind, only half covered by the ploughings, lying on the surface during winter, torn into fragments by the grass seed harrows, and the last remains pressed into the ground by the heavy rolling that finishes the process of sowing the seed in the spring. The application of rough strawy dung on fallow lands for wheat has been long observed to be the best use of the matters to that vegetable, and the subsequent reduction by the ploughings and harrowings of the land, and atmospheric agencies, is more effectual than the fermentation and decay in the heaps of preparation. These facts are attested by many results of experience, which wholly exploded the doctrine that has been long entertained of the damage and loss sustained by dung being exposed to the changes of climate in the usual vicissitudes. Fresh bodies will contain the specific caloric or lateral heat, which, in a greater or less quantity, accompanies every formation of existence, and this provision may be more favourable to vegetable life than the artificial productions of heat from fermentation and artificial regulations. Less expense is incurred by the application of fresh dung than by the preparation in heaps or pies, and a different use can be adopted, and at various seasons of the year. The certain fact of experience will be attended with important alterations in practice.

Manures are applied to the ground in two ways—dung is spread over the surface, or placed underground in the depth of a plough-furrow. In the first method the action is exerted by the shelter the covering affords to the roots of plants, and the consequent warmth that is conferred. Some benefit will accrue from the contact of the terrestrial and atmospheric agency, and from the liquid oozings that will descend into the ground from the substances that have been applied. The action of manures in the ground will arise from the caloric that proceeds from the mutual action of the applied matters with the soil, and of the substances with each other, all tending to produce warmth for the use of vegetable life. The application of farmyard dung is done at the wrong time of the year in the autumn; the winter soon follows, of which the cold is very inimical to chemical action, and must be hurtful to the future value of the manures. The action will be rendered of much less efficacy, if not, in many cases, altogether destroyed; and when the warmth of spring arrives, the matters are in a dormant state from a starved condition, and wholly unfit for energy in beneficial purposes. It is the great object to place the ultimate elements of matters in the closest contact, and to induce the combinations of moisture and caloric in the peculiar forms that are conducive to vegetable life. These forms may never be under human control, and wholly escape observation from being placed beyond any research that can be made, but every means must be used to effect that object by performing the modes of applica-

tion that may be most reasonably supposed to favour the attempt from theory and practice. It is the certain combinations of moisture and caloric that produce the immenses and largely varied numbers of organized life—that maintain and support the existence, and engender the diseases which terminate the existence of mortal endurance. Life and death are produced by the materials of agency under different forms and qualities.

The use of them as a motive power is not yet half developed nor applied to the purposes of which it is capable. The fixed objects in which the impelling power can be conveniently applied and commanded are daily increasing, both in number and utility; in these cases the application is under an easy control. In the propelling of moveable adaptations which require the use of trimmings and details, much difficulty happens in controlling the power and using it in minuteness. But it is very evident from the known use of steam that a large increase of the power is very possible, and that it is capable of being modified and reduced into many shapes and forms to adapt the convenience of purposes. The private roads of farms of land may be provided with a railway on the side of the common paths of traffic, running from a central point at the farmery, and branching into each gateway of the fields. From this point of ending a moveable railway can be laid over the field to suit the purposes of carrying dung, or the harvest of hay and grain crops, and the same provision will be made from the central depot at the farm, even to the dung-courts and to the rick-yards. The moveable railway is placed along the headland of the field, and at right angles with it, the lines of rail are placed at 10 or 12 yards distant with turntables, on which main and branch lines an engine of two to four horse power drags light iron waggons loaded with dung from which a man throws the manure right and left in the quantity, as allowed. In February or March the farm yard dung in a fresh condition from the yards, and short cut straws, mixed with feces, and impregnated with urine, is applied as a top-dressing to wheat sown on clay fallows, and spread most carefully over the ground, broken into fragments, and placed in a close covering of the surface. The quantity of moveable railway may be sufficient for one or two days' work, and then lifted and replaced for a continuance to finish the field. In this condition the top-dressing remains into April, when the grass seeds are sown, and then the harrows will tear the fragments into shreds, and mix the dug with the fine alluvium that has been produced by the winter's rains and thaws, and dried by the suns of spring. A heavy rolling will press into the ground the dung and fine earth, along with the seeds, which will find a matrix of growth never yet granted to any germination of plants in point of quality and a minute commingling. The dung and the soil are very finely commingled to suit the small seeds of the grasses, as the size of any seeds always need a soil of the same bulk in which to germinate and thrive. In this mode of application the fresh dung in unexposed feces, impregnated straws, and urinary liquids, will find a ready convenience to produce caloric warmth, from the contact of atmospheric elements that are fast increasing into power with the returning sun. This combination of favourable circumstances for the production of aliment to plants forms the grand secret to be discovered, and the great object to be attained.

After the wheat is sown in autumn, straw may be placed on the land in a quantity to cover the surface wholly and entirely, and secured in its position by placing clods of the land on the straw in places, to keep the covering from being moved by the winds. On fine soils of land, clods may be wanting, when branches and light timbers will preserve the straw in the position, till the covering is flattened and partially decayed by the weather. In northern climates the decay will soon be effected by the rains, frosts, snows, and thaws, which alternately prevail, and a short provision will be required to fix the straws in position; but in southern climates, the dry weather will longer delay the rotting of the straw, and a longer provision will be required. The covering of the straw on the ground will protect the wheat from cold, and provide warmth to the

young plants, which will be further promoted by the decay of the earthy straws forming a manure, and very especially to the seeds of grasses in the spring, after being torn into shreds by the harrows, mixed with the pulverized soil, and pressed into the ground by the roll. The result is much the same as by laying the dung on the surface in February or March, as before detailed.

Farm-yard dung in a state of decomposition on the surface of the ground, or partly covered in the soil, is placed in a very

favourable situation for the purpose of affording shelter and warmth to the plants and to the ground, and of provoking the combinations of terrestrial and atmospheric elements to produce aeriform matters, which are very justly supposed to constitute a large portion of the food of plants. When dung is wholly covered in the ground, its agency is much restricted from want of the necessary adjuncts to promote the effect.

J. D.

THE MALT-TAX.

DEPUTATION TO THE CHANCELLOR OF THE EXCHEQUER.

On Tuesday, March 8, a numerous deputation from the Chambers of Agriculture had an interview with the Chancellor of the Exchequer, in Downing-street, on the subject of the malt-tax. The deputation was introduced by Colonel Tomline, M.P.; and among the members of Parliament who accompanied it were the following:—Earl Percy, Mr. J. Howard, Major Paget, Mr. Neville-Grenville, Mr. M. W. Ridley, Mr. E. Turner, Mr. M. E. Welby, Colonel Co bett, Mr. C. Sykes, Lord Claud John Hamilton, Mr. Sewell Read, Sir Montague Cholmondeley, Colonel Wilmot, Colonel Gilpin, Lieut.-Colonel C. Amcotts, Lieut.-Colonel Parker, Mr. J. Figgins, Sir George Jenkinson, Bart., Mr. R. Paul Amphlett, Sir W. Buller, the Hon. F. Wapole, Sir Edmund Lacon, Colonel Barttelot, the Hon. E. Miller, Viscount Holmesdale, Mr. T. Mitford, Mr. Ormsby Gore, Sir Percy Herbert, Mr. Rowland Winn, Mr. H. C. Wise, the Hon. Henniker-Major, Mr. Benyon, Mr. Beach, Mr. Hildyard, Mr. W. Baker, Mr. J. Floyer, and Mr. G. B. Gregory.

Colonel TOMLINE, said: Sir, I have the pleasure of introducing to you a deputation from the Central Chamber of Agriculture, composed of delegates from seventy-two Chambers throughout England. Of course I shall say nothing to you on this subject, because you understand it as well as I do.

The CHANCELLOR OF THE EXCHEQUER: Oh, no (laughter).

Colonel TOMLINE: You understand it, though you don't feel as we do. I will only say one thing. A former President of the Board of Trade (Mr. Milner Gibson) said that the incidence of the malt-tax was only 12½ per cent.; and Mr. Gladstone, in a very intelligible speech, also gave us to understand that that was his idea of the matter. Now, I have barley which I should be happy to sell at 21s. 8d. per quarter. If I wished to malt it, I must pay 21s. 8d. duty, and that is more than 12½ per cent. (Hear, hear). I observe that Lord de Grey, in speaking the other day to a deputation which waited upon him in reference to the education question, remarked that at this moment political economy is being taught in schools which are maintained out of the taxes, adding that when such schools are maintained out of the rates, political economy will no doubt be taught more extensively than it is now. From what I know of the gentlemen in the provinces I feel sure that they will be reluctant to pay rates for such political economy as consists in taxing one of the three paying crops, under the four-course system of agriculture, 100 per cent. The secretary will now read the memorial, sir, and hand to you a list of the names of the gentlemen who have to speak.

The SECRETARY then read as follows:—

TO THE RIGHT HONOURABLE THE CHANCELLOR OF THE EXCHEQUER.

SIR,—At a meeting, this day, of the Central Chamber of Agriculture, representing seventy-two Chambers of Agriculture in forty counties of England and Wales, with a total constituency of seventeen thousand members, the present deputation was instructed to lay before you the following points with reference to the Excise duty on malt.

(1) The malt tax is prejudicial to the agricultural interest, because it interferes with the most remunerative relations of crops, and hinders the growth of barley. In particular, the operation of the duty discourages the growth of second-class

and medium quality barleys. Taking high class barley as worth 40s. per quarter, barley that will produce one-fifth less strength and quality in beer should be worth 32s. per quarter, but owing to the payment of a heavy duty, which is not on an *ad valorem* scale, the maltster cannot afford to give for that barley anything like so much. The better barley at 40s., together with the duty, 21s. 8d., costs 61s. 8d. per quarter as malt, and the lower class barley, being of one-fifth less merit, is worth as malt 40s. 4d. per quarter. Of this sum 21s. 8d. goes for duty, leaving, therefore, only 27s. 8d. as the price given to the farmer for barley worth, according to its intrinsic value, 4s. 4d. more.

This virtual bounty upon first quality barleys operates as a fine upon high farming, for the production of very heavy and prolific crops is incompatible with the preservation of the most superior quality for malting purposes.

(2) *By the Excise restrictions farmers are deprived of source of profit in their business from the use of malt and sprouted grain as food for animals.*

By the simple and inexpensive process of germinating, farmers could convert their medium and inferior barleys into a valuable food containing 20 per cent. more of flesh-forming constituents and 100 per cent. more of sugar than the raw grain; while it is calculated that this most nutritious food would cost the farmer only one-half as much as the same barley made into malt and charged with duty.

The farmer is prohibited from using his own germinated grain, and thus protecting himself to a large extent against the adulterated feeding-stuffs which now victimise him in the market. The English farmer is placed at a disadvantage as compared with the foreign farmer, who is free to use germinated grain without payment of duty, and to compete in our meat markets against home produce, which the English farmer may not rear and fatten by the same means. *Mr. Gladstone's Malt for Cattle Act is inoperative*, because of the expensive and wasteful character of the feeding mixtures which alone it permits to be used, and because of the obstructive and vexatious conditions which it imposes.

(3) The incidence of the tax falls with peculiar pressure upon the labouring classes, artificially enhancing the price of the national beverage, thereby encouraging the use of unwholesome and deleterious compounds, and interfering with cottage brewing, and with the comforts, habits, and morals of the poorer families. It is respectfully submitted that the heavy apportionment of this tax upon the labouring classes is apparent from a comparison with the duties on tea and coffee.

According to the inquiries of the Board of Inland Revenue in 1857, and the recent statistics of Mr. Dudley Baxter, the annual consumption by the working classes is—of the tea 5lb. per head, and of coffee 1lb. per head, the average selling prices of these articles being 2d. 8d. and 1s. 5d. per pound respectively, and the annual expenditure upon them, therefore, 9s. 5d. per head. If a repeal of the 6d. per pound duty on tea, and of the 3½d. per pound duty on roasted coffee, were to lower the average retail prices possibly to 2s. and 1s. respectively, there would be a saving of 2s. 5d. per head in the annual expenditure of the working classes.

Of beer, the 'temperate consumption' by the working classes appears, from the investigations of Mr. Dudley Baxter, to average twenty gallons per head per annum, which is less than half a pint per head per day; and taking the average

retail price at 1s. 4d. per gallon, the annual expenditure is 26s. 8d. per head. If, as Mr. Gladstone admitted in the year 1865, the price of beer is raised by the malt duty 20 per cent. above the natural price, a repeal of the duty would save the working classes 4s. 5d. per head per annum. Hence, a repeal of the £3,000,000 of tea and coffee duties, or a reduction of £3,000,000 in the malt duty (which would be about half the impost), would alike relieve the working classes to about the same amount per head. And if the tea and coffee duties are specially oppressive upon the poorer classes of the community, so, therefore, must be the malt tax.

This is arguing from Mr. Gladstone's estimate that the operation of the malt duty raises the price of beer only 20 per cent. But in another part of this paper are stated reasons for believing that the natural price is raised by the tax very much more than 20 per cent.

(4). In the opinion of this deputation the question of freeing malt liquors from taxation should be entirely dissociated from that of lightening the taxation upon spirituous liquors.

(5). In the absence of an important reduction or total repeal of the malt-tax, great relief would be afforded to agriculturists by transferring the incidence of the burden from malt to beer.

(6). *It is submitted that any supposed difficulty of levying £6,500,000 directly upon beer, by brewers' licences or otherwise, is not to be compared with the great loss to consumers arising from the cumulative incidence of the malt duty.*

From the evidence of Mr. Carling, of the Board of Inland Revenue, before the Select Committee of the House of Commons, it appears that the cost of the barley and hops for producing beer of the strength of four barrels to the imperial quarter averages about 4½d. upon each gallon of beer, that the cost of converting the barley into malt is 0½d. upon each gallon of beer, and that the duty, if levied directly upon the manufactured product, would average 1½d. per gallon, making a total cost for materials, malting, and duty of 6½d. per gallon. The selling price of such beer is 1s. per gallon, and as the difference between this and the sum of 6½d. per gallon—amounting to 5½d. out of the shilling—cannot be accounted for as the cost of brewing and as profits, a considerable proportion of this difference must represent an absolute loss occasioned by the operation of the duty.

It further appears, from a calculation of Mr. Joshua Fielden, M.P.—which the Select Committee reported to be, in their opinion, based upon a correct principle—that the pressure of the duty increases at every stage of the trade and manufacture in about the following proportions: The maltster, paying the tax of 21s. 8., requires 5 per cent. interest and 10 per cent. profit for this portion of his capital invested, and charges the brewer 2s. 11d.; the brewer, requiring also 15 per cent. upon this expenditure, charges the retailer 28s. 8d.; and the retailer recovers from the consumer this amount with 10 per cent. added for his profit, making the total tax paid by the consumer 31s. 6d., for 21s. 8d. actually accruing to the revenue. Thus, according to this estimate, the amount of malt duty paid by consumers is £9,425,000, for £6,500,000 received by the revenue, showing an absolute loss of £2,925,000, or 45 per cent. upon the duty collected.

It appears, moreover, that the payment of the malt duty by brewers in the same way that the commuted hop duty is now charged, namely, by a licence duty, calculated according to the quantity of malt or the equivalent of malt used, would be a positive gain to the brewer; for, according to these figures, which are approximately, though not strictly correct, they would buy malt 2s. 11d. per qr. cheaper, owing to the abolition of the malt duty and of the maltster's interest and profit upon it, and would pay 21s. 8d. per qr. in licence duty, showing a saving of 3s. 3d. per qr.

The gain to the consumer is made apparent by following out Mr. Fielden's illustration of the principle upon which the malt-tax operates. The retailer, having henceforth to repay the brewers' interest and profit upon 21s. 8d., instead of upon the larger sum, would charge his 10 per cent. profit upon 24s. 11d., instead of upon 28s. 8d., making the total tax paid by the consumer 27s. 5d., instead of 31s. 6d. This is a gain to the consumer of 4s. 1d. per qr. of malt, from transferring the incidence of the taxation from the stage of malting to that of brewing, while still leaving the amount of revenue from this source at its present heavy figure.

In support of the opinion that an equivalent for the malt-tax could be readily collected as licences on public and private brewing, the Select Committee of the House of Commons adduce the evidence of Sir Charles Presby, formerly Chairman of the Board of Inland Revenue, and the evidence of Mr. C. B. Forey, Surveying General Examiner of Excise, reporting that 'the former witness stated distinctly that there would be no difficulty in raising a tax from private brewers; while the latter "could point out no insuperable difficulty in substituting a brewers' licence in lieu of the malt-tax."

Mr. ROWLEY (Cheshire) said: Sir, I believe the duty which I have to perform is that of showing the injury which the malt-tax inflicts upon the farmer in the cultivation of the soil by preventing him from making the largest quantity of beef, mutton, and long wool that he can out of his occupation. I have paid attention to this subject during the last twenty years, and I may remark that the malt-tax bears particularly upon the case of Ireland. The Irish cultivators cannot, with the climate they have to deal with, grow wheat in competition with foreign countries under free importations; hence they are compelled to fall back upon the cultivation of oats and barley. The barley produced in Ireland is not of the first quality, and does not go to the maltster. Official returns show that a large proportion of the Irish land which was under cultivation twenty years ago has since gone out of cultivation; and it must continue in that position if the malt-tax be not repealed or reduced. The Irish soil is very good, but it cannot withstand this difficulty. I may state that friends of mine, who went over to Ireland some years ago with the idea of leasing large farms and of purchasing small properties, came back and said they felt perfectly certain that if the malt-tax were not repealed the land of Ireland must go out of cultivation, and great numbers of the people leave the country. This was stated twenty years ago, and it has been borne out by what has occurred since. A Yorkshire gentleman, a friend of mine, purchased 800 acres of land in Ireland to cultivate in the Norfolk fashion. That was ten years ago; and he has since told me that he could not grow wheat, that his barley was not good enough for the maltster, and he had now laid down the land for grass, and would be glad to sell it. He said he felt perfectly certain that the Irish soil could never be cultivated with the malt-tax. Since then the whiskey duty has been increased; and the grain of Ireland which should be used in the manufacture of a second quality of beer cannot be so employed.

THE CHANCELLOR of the EXCHEQUER: I understand your point to be that the tax limits the barley that is used for malting to the first quality?

Mr. ROWLEY: Yes, it does, sir. Some years ago we were advised as farmers to grow less corn and produce more beef and mutton; but the less corn we grow the less beef and mutton is produced. The quantity of turnips grown in Ireland is gradually becoming less, and it is a singular fact that an acre of turnips will produce as much money value in meat and wool as the best acre of grass in the kingdom (cries of "More"). The turnips produced in Ireland are an inferior class. Grass land which produces 20 stones of meat per acre—it must be very good land indeed to do that—will let for £3 an acre; while turnip land which produces the same money value in mutton and wool averages from 25s. to 30s. an acre. A good crop of turnips will feed eight sheep per acre, and they will lay half-a-stone per quarter upon themselves; making altogether 16 stones. You have eight good fleeces at 10s. apiece, and all this makes more money than the best grass land. I have no doubt that the result of the present state of things, if it continue, will be that Irish land will almost go out of cultivation, simply because the corn crops do not pay.

THE CHANCELLOR of the EXCHEQUER: Let me understand you; I am not very clever about these things. What you mean is that the land would produce an inferior kind of barley, but that it does not pay to grow it because of the malt tax—that in the rotation that would, but for the malt tax, have been the best crop?

Mr. ROWLEY: Yes.

Mr. MAY (Staffordshire): The gentleman who has preceded me comes from the North of England; I come from the Midland Counties, and can fully bear out all that he has said with regard to the irregularity of the cropping which this tax causes to us. It is well known that the price of wheat is degen-

rating. The removal of the last shilling of tax on corn imports has made England one vast granary; and the probability is that in future we shall always have a stock of wheat at our ports, as we have at this moment, to be pushed into our markets whenever there is an advance sufficient to pay the importer. In consequence of that the men who have been disturbed in growing barley, as in the case of the hop, will not be able to grow wheat. If wheat is to be at the present price, or anything like it, even with a fair crop, we shall not know what to do with our land. And there is this anomaly in the present year that, with a very small produce, something like 20 per cent. less than the average, we have very low prices. It seems to me, then, but right that every facility should be given to us to make the best of a single crop, which is barley, and limited in its growth. Wheat, oats, beans, and peas are imported freely from all parts of the world; whereas barley has only a limited area; and, that being so, why should we not be allowed to grow the crop that we can grow best?

THE CHANCELLOR of the EXCHEQUER: You mean that no country can compete with us in barley; and that English barley is the best in the world?

MR. MAY: It is so. Supposing our barley not to be of a good colour it will not be sold for malting; the maltster will not touch such barley, and in our neighbourhood it is seldom that we get the whole crop good. I have been a farmer for 25 years, and only in 5 years have I sold the whole of my crop of barley for malting purposes. Two of those 5 years were the last two, both of which were very hot; and it appears to be only an act of justice to place us at least in the same position as the foreigner. The time has arrived, we think, when we ought to have our hands loosened from these trammels, and be allowed to do what we like with our own produce.

THE CHANCELLOR of the EXCHEQUER: How do you consider that you are worse off than the foreigner?

MR. MAY: Because we cannot grow what he can. Wheat is the main produce of our heavy soils—clay and marl.

THE CHANCELLOR of the EXCHEQUER: Do you think, then, that barley ought to be set free in order to enable you to compete with those foreign countries where wheat is grown?

MR. MAY: Yes, and I think we might export malt. For why should we not send it abroad, if we can grow better than they?

THE CHANCELLOR of the EXCHEQUER: Is there anything that prevents you from doing so now?

MR. MAY: Yes; the malt tax.

THE CHANCELLOR of the EXCHEQUER: But you get the drawback.

MR. MAY: True; but the great difficulty is with the maltster. He turns away from it, if we show a stained sample. Mr. Bass, I see, recommends the growth of barley after wheat, but good farmers will tell you that two white crops in succession are not good farming. So that we are placed in this dilemma; that we cannot do what we wish with our own produce, and if you would take off this tax I am convinced that it would not only confer upon us as agriculturists a decided advantage but be a benefit to the whole country.

MR. SEAMAN (Essex): Experience has taught me, sir, that grain in a state of germination just previously to being carried to the malt kiln is by far the most nutritious and the quickest fat-former of any substance, whether single or combined food, whatever. During the past 15 years I have conducted experiments on a considerable scale. For the first 5 years of that period my experiments were confined to horses, and they brought me to the conclusion that if ever Englishmen became hippophagists I should have no difficulty in producing an abundance of horseflesh. In 1861 I turned to feeding sheep with this grain.

THE CHANCELLOR of the EXCHEQUER: What grain?

MR. SEAMAN: This (producing a sample bottle of germinated barley). I used it for a number of ewes and lambs, my success was very great indeed. For there was not a single death during the whole of the lambing season, although I had something like three hundred ewes, and it is a very common thing for people to lose 10 per cent. of their ewes, and not an uncommon thing to lose 20 per cent. of their lambs, especially in seasons when they have not a supply of suitable food. From 1861 the consumption of germinated barley increased in my neighbourhood, until in the year 1865 there were something like a thousand sheep feeding upon it,

within an area of ten miles of my residence. This was in the summer of 1865, when there was scarcely a blade of grass to be seen; when our grass fields were like ploughed fields, and nothing could be obtained so suitable for the sheep as this; for they fattened very fast upon it, and produced an immense quantity of meat. In the month of June, 1865, mutton chops were worth 15d. a pound, and there were scarcely any grasses and roots to be had of any kind; whilst linseed cake was £12 10s. per ton, and barley was worth only £8 per ton. This immense quantity of meat was being produced in that neighbourhood when its price was 15d. a pound, and the *Times* wrote that, so far as meat was concerned, famine was at our doors; at that critical juncture I received an order from the Excise not to feed any more sheep upon this grain. About the same time the result of Mr. Lawes's experiments came before the world, and its effect was to lead to the belief that raw grain was superior to malt; but I must tell you that amongst all Mr. Lawes's experiments there was not one in which malt or barley was used alone, for if there had been Mr. Lawes would have been obliged to insert an extra column in his report for the sheep which had died from the use of raw grain, because raw grain is a deadly poison for sheep if they are permitted to consume it *ad libitum*.

THE CHANCELLOR of the EXCHEQUER: Any sort of grain?

MR. SEAMAN: Wheat and barley. Many farmers said, "Well, if raw grain is as good as malted, it must be as harmless;" so they began to use raw grain on the faith of Mr. Lawes's experiments on the feeding of sheep, and the result was in many cases a loss of fifty per cent. This germinated grain undergoes a change before it enters the body of the animal.

THE CHANCELLOR of the EXCHEQUER: By fermentation?

MR. SEAMAN: Yes; and the noxious element being destroyed, the sheep can feed upon it, as I said, *ad libitum*, and produce an immense quantity of meat. For example, two lbs. of germinated barley will produce three lbs. of mutton per week on each sheep, and that without mixing linseed cake with it. In fact, no other food is required to be mixed with it, and now that we have such enormous importations of maize, wheat, and barley, I have no hesitation in saying, should an almighty fiat go forth to take away from us our green crops, our peas and our beans, there would be enough maize, wheat and barley supplied to prevent meat from being dearer than it is now.

MR. GARDNER (Essex): I am able to support what my friend says on every point; and have to hand you a sample of germinated barley cooked and prepared for food.

THE CHANCELLOR of the EXCHEQUER: Is that pure?

MR. GARDNER: Yes; and now I hand you another, which you see is composed of leather, rags, fibres, and hair. It shows you how we are victimised in our cake.

THE CHANCELLOR of the EXCHEQUER (holding up what appeared to be a strip of leather about six inches in length): Is this what you are supposed to give your beasts as cake to eat?

MR. GARDNER: Yes, and we should not be in that position if we had the opportunity of making our own food.

THE CHANCELLOR of the EXCHEQUER: What is this first sample?

MR. GARDNER: That is germinated barley cooked on the malt-kiln.

THE CHANCELLOR of the EXCHEQUER: Without linseed?

MR. GARDNER: Yes, or anything else. This is malt, so called; but it would not suit the purpose of the brewers to buy it.

THE CHANCELLOR of the EXCHEQUER: It is made from an inferior kind of barley?

MR. GARDNER: Yes, and the tax on that barley is not less than £6 1s. per ton.

THE CHANCELLOR of the EXCHEQUER: The tax on the malt that a ton will produce?

MR. GARDNER: The barley this malt is made from I can purchase in the market at £6 1s. a ton, and if I convert it into cattle food at the duty of 21s. 8d. per quarter, the tax brings up the price of this valuable cattle food to £13 15s. a ton. What the malt tax does is to prevent me and all my brother farmers from making use of the grain which we grow for the purpose of producing meat.

MR. WHITWELL (Peterborough): I wish to say a few words on behalf of the labourers. At present they may as a class be said

to have no beer. I have seen many of them with their bread and bit of cold meat, and nothing but water or a little weak tea or coffee to wash it down; and if anybody supposes that they drink that from choice, he has only to take a bottle containing a pint or so of beer for each labourer before him to see that he is delighted at the prospect of having something which he does not very often get. I must say that if the malt-tax were repealed, the labourer who cultivates a small quantity of land would be able to turn the little produce of his garden or allotment, which is often barley in the rotation, into malt. If there were no restrictions he could easily get it malted, and he and his family, instead of having no beer from one week's end to another, might have a quart a day. Thus the labourer would be kept at home, and the public-house would be compelled to sell a better article in order to attract customers. I consider that the position of the agricultural labourers has not occupied sufficient attention in reference to the malt tax. It should be remembered that the labourer has very few articles of food. As a rule he has only bread, cheese, and a little meat to eat, and the everlasting tea or cold water to assuage his thirst in summer. If beer were added to the list he would bless the Chancellor of the Exchequer.

The CHANCELLOR of the EXCHEQUER: I should like to ask a question. Supposing it were possible to transfer the collection of the tax from the maltster to the brewer, do I understand that that would be considered—of course it would not be as good as taking it off altogether—a great relief? (Several voices: "Yes.")

Sir G. JENKINSON, M.P.: It would set free the farmers to use his produce for feeding his animals.

The CHANCELLOR of the EXCHEQUER: Do the gentlemen here present think that the inferior kinds of barley would then be more available for that purpose?

Exclamations of "Decidedly."

Mr. BIDDLE (Suffolk): The malt-tax bears most oppressively upon the labourer who brews for himself and his family. I know that the practice of cottage brewing at the time of harvest has been denied; but I have gone round among the homes of a number of labourers in my employment, and have found them engaged in brewing. For the last twenty years cottage brewing has in fact been the rule in my neighbourhood. Independently of the malt which, as employers, we give at the time of harvest, every labouring man brews two bushels of malt in the year, which would cost at the present time 18s., or 9s. a bushel. The other day I sold barley in Ipswich market at 4s. a bushel, which would have made as good malt as the labourers use, and from the evidence given years ago before the committee which sat on the subject 1s. a bushel would be ample for the malting. And yet with these two bushels of malt the labourer would brew 288 pints of beer—that is something like three-quarters of a pint a pint on the average. I ask you, then, sir, to consider the labourer's case and to deal with it. It appears to me that it is not fair or consistent with commercial principles that he should be required to pay cent. per cent. in the form of a tax on malt if he brews at his own home.

Mr. LEMAN said that if the tax were placed upon beer instead of malt, that would give the same amount of revenue, while the farmer would thus be relieved from the great inconvenience under which he now suffers through the restrictions with regard to malt.

Mr. JASPER MORE: I wish to observe, sir, with regard to this question, that the deputation seem to me to be placed rather in a difficulty. You are no doubt aware that previous Chancellors of the Exchequer have asked similar deputations to the present one, what substitute they could suggest for the malt tax, and when they have proposed one they have been twitted with being amateur Chancellors of the Exchequer.

The CHANCELLOR of the EXCHEQUER: That is a common fault on these occasions.

Mr. J. MORE: We have felt, sir, that as there might be a division of opinion on that point, the wisest course on this occasion is to leave the question of providing a substitute for the malt tax to you (cheers). As a member of the Malt Tax Committee I beg to draw your attention to the evidence given by the excise authorities who were examined before that committee.

The CHANCELLOR of the EXCHEQUER: You allude to Mr. Forsey and Sir Charles Presby, I have read the evidence.

Mr. J. MOORE: Yes, they said that they regarded it as pos-

sible to draw the same amount of rent from other sources. I believe it would be a relief to the farmers if the tax were transferred from the maltster to the brewer; and I am prepared to say that the farmers would consent to a tax being levied on private brewing.

Mr. LATIMORE: Allow me, sir, to say a few words as an old advocate of this cause. As far back as the year 1847 I formed part of a deputation to Lord John Russell, when he was Prime Minister, on this question. In 1849 a number of leading manufacturers invited a deputation of farmers to discuss this question with them in London. I had the honour of taking part in the discussion, and the result was that the conference declared that something was due to farmers, that their movements were fettered, and that they had not then that fair play to enable them to contend with the unrestricted competition of the world to which they were entitled. But these manufacturers mentioned one condition, they said: "If you will help us to get rid of the agitation for the revival of protection, we will help to free you from the fetters to which your industry and occupation are subject." I am sorry to say that a portion of the agriculturists did not at that period see their interests so clearly as they do now; but, the pressure of circumstances, the competition of prices, the increase of wages, the vicissitudes of seasons, and the introduction of disease by foreign cattle, have devastated their property, if not emptied their purses; and I feel humiliated to think that 24 years after the deputation to Lord John Russell, to which I have just alluded, when he declared that he could not answer the arguments advanced in favour of the total repeal of the malt-tax, there should be a necessity, sir, of appealing to you to do what, in my opinion, ought to have been done by your predecessors. I want to say one word about the tax if I have not wearied you already.

The CHANCELLOR of the EXCHEQUER: Oh, no.

Mr. LATIMORE: The other day Mr. Bass remarked as a member of a deputation which waited upon you, that he considered that a duty of 3d. a barrel on beer was so infinitesimally small a tax, that he could not recoup himself for it from his customers, and that a tax of 3s. or 4s. a barrel would be required, that being something tangible.

The CHANCELLOR of the EXCHEQUER: Mr. Bass said the other day, if you put the tax on beer, you may leave me alone to get it out of my customers.

Mr. LATIMORE: I hope, sir, that this is the last occasion on which any deputation will wait on a Chancellor of the Exchequer to bait him on this subject. It seems to me exceedingly desirable that this tax should be entirely abolished, because it fetters industry and impedes cultivation, because of the evil effects which are seen in the wan and discontented faces of the labourers, and the manifest tendency of the tax to increase drunkenness and adulteration. The temptation to adulteration is greatly strengthened by such an impost. Beer is the natural beverage of the agricultural labourer, and if malt were free the result would be to do away with the incitement to adulteration, and at the same time to diminish the temptations to excessive drinking. Something has been said to-day respecting Mr. Lawes's experiments on the feeding of cattle with malt and barley. I hold in my hand a copy of some comments of my own on that subject. I went over Mr. Lawes's farm, and I pointed out at once animals which had been fed on malt and others which had been fed on barley. I must say that I cannot regard Mr. Lawes as a good authority on the question of using malt for feeding purposes. In the very year in which his experiments were made he lost one-third of his lambs and sheep for want of malt. His own shepherd admitted to me with tears in his eyes that his master had lost a large proportion of his flock for want of that very article which his master persuaded the Government was not necessary for feeding. While he was thus misleading the Government he had himself just lost one-third of his flock for want of malt. Arguments on this subject seem to me to have been exhausted. What I rely upon is the imperishable principle of justice. It is indisputable that agriculturists have suffered in this matter partly from their own mistakes and partly for want of honesty on the part of landowners who have not been true to the tenants in reference to the malt-tax. There would have been no opposition scarcely to repeal on the part of governments if the county members had all acted up to their duty and determined that this question should be settled for ever; and I need hardly say, sir, that in-

perishable honour will attach to the name of the minister who shall remove the malt tax.

The CHANCELLOR of the EXCHEQUER: Well, gentlemen, I will make one admission to you very cheerfully, and that is that it is quite impossible to levy a revenue approaching £7,000,000 upon a single article of agricultural produce without very much interfering with the cultivation of the land and with the business of those who are engaged in it. It would be useless to attempt to conceal that state of things. It is absolutely impossible that the tax should not have a very great and very embarrassing effect. That cannot be doubted for a moment. I will make another admission: I think it is exceeding undesirable—perhaps in taking this view I am influenced a little by early prepossessions and associations—that a large, most important, most respectable, and respected class like yourselves should live in a state of chronic discontent, thinking itself ill-treated; and, therefore, nothing would give me greater pleasure than to hit upon anything which might be in the least degree gratifying or satisfactory to you in this matter, and which would not only be of service to you, but also beneficial to the country at large. I do not wish a great class like that to which you belong, to think that it is not well treated, because, although the feelings which you entertain may be exaggerated, yet I believe you entertain them honestly and truly. I do not wish any large class like yours to consider that it is passed by, or neglected, or not treated as fairly as anybody else. Of course, as to taking off the malt-tax, I must tell you frankly, that the thing is simply impossible; and for this reason, that all our duties on fermented and spirituous liquors hang together. Even supposing it were in my power, supposing, that is, I had the means of doing it pecuniarily, still I could not recommend it, because that would immediately shake the whole foundation, upon which rest some £15,000,000, raised upon spirits. We cannot look at these things separately, we must look at them as a whole; and, therefore, it would be vain for me to hold out any hope of that kind. Whether we may be able to reduce the duty is another question. Do not imagine that I should look

upon reduction unfavourably; on the contrary, I should be very glad if it were in my power to reduce it. As to the views which you have placed before me to-day, they shall be most carefully considered; and I do not say that as a mere matter of courtesy, by way of sending the deputation away from this room in a good humour. We shall look into the thing as minutely and carefully as we can; and I am bound to say that if we can find any means of putting whatever duty we collect upon a later stage of the manufacture, upon beer instead of malt, nothing would give me greater gratification than to propose that. Of course there are great difficulties in the way, and one difficulty is the question of the private brewers, and how to deal with them (Several Voices: "Licences"). But I could not take a licence-duty from a labourer.

The Rev. E. SMYTHIES: You take one for dogs.

The CHANCELLOR of the EXCHEQUER: The next objection is, that you would be liable to fraud, inasmuch as people would make any excuse in order to undersell others (A Voice: "You might send them to gaol"). Well, the whole case is full of difficulty. I don't say that anything can be done. Don't go away with an impression that I make any promise to you. All I can say is that we are now looking, and we shall look, carefully into the question; and if we can hit upon any means by which we can set your industry more free, and redress the matters of which you complain—and it seems to me that your complaints are exceedingly fair and reasonable—it will afford us great pleasure to do it. On the other hand, if it cannot be done, I shall endeavour to give good reasons for not doing it; and it will not be for want of good-will, but because we find it impossible to do it. More than that I cannot say.

Col. TOMLINE: I am sure the deputation will agree with me that our thanks are due to the Chancellor of the Exchequer for the manner in which he has received it.

The interview, which occupied about three-quarters of an hour, then terminated.

THE IRISH LAND QUESTION.

The great fight of the Session has already ended in no fight at all. The wholesome influence of an Opposition has come in this matter to the Opposition exercising no influence whatever. Four evenings have been occupied in dull and almost unprofitable debate, and some dozen or so of members have declared themselves not satisfied with the Irish Land Bill. Most reasoning men had long since arrived at a directly different conclusion. The Premier, in fact, had in the very outset carried the country with him; and, if never Quixotic enough to expect to tranquilize all Ireland, those best qualified to judge will best know how well Mr. Gladstone has succeeded. As we said when he first made his statement, "of all the pamphlets, essays, letters, or reports we had met with, there was none to compare with that address." Nevertheless, the measure is essentially Irish in its tone, many of its provisions being thoroughly inapplicable to any other part of the United Kingdom, as no doubt for this very cause its value is the greater. It was a special case that required special treatment, and nothing probably would create more dismay than any attempt to establish so exceptional a remedy as a precedent in other places. Mr. Samuelson, a gentleman whose very name in some degree identifies him with Agriculture, said he "regarded the Bill as a most important step in a course of legislation which he believed would be both a benefit to Ireland and to the Empire at large." From the context here one would be inclined to gather that the Irish Land Bill might furnish the framework, or its principle be extended to other occupations where there has so far been no experience of such peculiar usages. Whereas, nothing would promise

to be more pernicious. The demarcation line between Ireland and rest of the United Kingdom, or even of the Continent, in the way of land tenure could scarcely be drawn more strongly than by the ocean itself. As we have previously endeavoured to show, there may have gradually grown some reason for the recognition of Good Will, for Security which almost amounts to Fixity of tenure, and so forth. There may be right and justice in maintaining a race of cottier farmers, or in allowing to tenants something of the position of proprietors; but all such Custom has come more as a matter of necessity or of expediency rather than of sound policy, and the lesson which we learn is that we cannot too carefully avoid the encouragement of these practices elsewhere.

So far, indeed, as England is concerned, the discussion might be forgotten forthwith, saving, perhaps, but for one speech of remarkable practical ability. It was only last year, if we remember aright, that Mr. Henry Chaplin, a new member of the Commons, fairly took the House by storm when touching on another phase of the Irish difficulty. There was not so much scope now; the subject was not one of so much general interest, but the honourable member for Lincolnshire has by no means disappointed his early promise, and it may be, possibly, because he is one of the members for Lincolnshire that he has on this occasion done so well. He is one of the few, one of the very few, who have essayed to compare the two systems of tenure with anything like success, and in doing so he has been able to speak with an air of singular authority. Mr. Chaplin is not only a

county member, but a country gentleman; a large landed proprietor in Lincolnshire, upon whose own estates the English Tenant Right principle has demonstrated its use and worth. That, if anything comes consequentially from the adjustment of the Irish land question, there will be the more general establishment and appreciation of the English Tenant-right Custom is already sufficiently evident. More and more attention is being called to this matter; people with a prejudice grounded in ignorance are beginning to educate themselves, very possibly on the incentive that it may be as well to know something of English as of Irish Customs. Men like Mr. Caird may have persistently ridiculed or confounded the English Tenant Right, and others, taking the cue, have more recently spoken to "that old offender," Custom of Country. But the time for this sort of thing is rapidly passing away, when every man who knows anything of English agriculture, when every man who reads him or heard him will testify to the excellence of Mr. Henry Chaplin's speech. And it was in this wise that he spoke: "In England especially in those parts of the country where agriculture was carried to the highest perfection, there was something which was entirely wanting in Ireland—namely, a marked, distinct, and accurate system, capable of being enforced at law, assuring the tenant that he would be amply repaid for everything that he had laid out in the cultivation of the soil in the event of his being ejected from his farm. He would take as an instance the Custom that prevailed in the county which he had the honour of representing—and he did not think he should be accused of undue partiality when he asserted that his county stood pre-eminent for the excellence of its cultivation. In no county was the science of farming carried to such perfection, or capital more liberally expended upon the soil, and nowhere was the identity of interest between landlord and tenant more fully recognised, or were more cordial and kindly feelings entertained between them. And yet this was a county where leases for a term of years were practically unknown, or, at all events, were very rare. It would merely weary the House were he to enter into details with respect to the various arrangements. They were many, and necessarily so, because in themselves the operations of farming were of a very multitudinous character. Under those arrangements compensation was amply provided for everything that could be laid out in fair farming, the amount of compensation to be paid being fixed by a valuer or valuers, and a third party being called in to act as umpire if necessary. So simple was that operation, and so well known its results, that an appeal to law or a dispute scarcely ever arose; and not the least advantage of the system was that it applied with equal effect to small or large farms. By this means security of tenure and its attendant beneficial results were attained; and although no man could more heartily acknowledge than he did the cordial and kindly feelings mutually entertained with respect to each other by the landlords and the tenants, yet in his judgment those feelings were mainly due to the uniform operation of the just and effectual system of Tenant Right to which he had referred."

Can anything be clearer than this? There are people who will tell you that a tenant who farms on a yearly agreement has nothing more than a blind confidence in his landlord, that he has to depend on good-feeling which may be destroyed in a moment, that this is not business, and so on. But Mr. Chaplin, on the contrary, shows us that this *is* business, and that nowhere do landlord and tenant do better than where such an arrangement is in force. It may be useful, in truth, to compare the clear, concise, and straightforward phrase in which Mr. Chaplin puts the advantages of his Tenant Right with the half-hot and half-cold air with which Mr. Sewell Read ap-

proaches the subject: "The custom as between landlord and tenant in Ireland was, as far as he could learn, precisely the same as in England, the difference, if any at all, being in favour of the Irish tenant. There were, for instance, more leases in Ireland, and when the Attorney-General talked about Derbyshire and Lincolnshire Tenant Right, he would merely observe in reply, that in the large majority of counties in England there was no Tenant Right at all, and that in Norfolk no shadow of a custom of that kind existed. Irish members might, however, say, 'You have covenants in Norfolk, which we look upon in the light of a compensation for unexhausted improvements.' Those, however, constituted simply a reservation which was made by the landlord for his own benefit and the benefit of the estate, so that the outgoing tenant should at the expiration of his tenancy leave the roots and hay and straw to be paid for at a certain valuation." It would be difficult to say from this whether Mr. Sewell Read would wish to see the Lincolnshire principle extended or not. As reported the honourable member would almost seem to imply that as they had not got Tenant Right in Norfolk they did not want to have it; especially as the custom is "precisely the same between landlord and tenant in Ireland as it is in England." That is, of course, precisely the same *with a difference*. There are some features or claims which no doubt resemble each other, but it is simply preposterous to assume that the Customs are anything like identical. Proportionately, indeed, as Mr. Chaplin is happy in distinguishing the two systems, does Mr. Sewell Read contrive to confound them. He talks of English and Irish in the same breath, with a kind of running accompaniment of indifference to either. "He did not mean to say that the English system was right and the Irish wrong," and so forth. In almost every respect Mr. Chaplin's is by far the more masterly disquisition of the two. He not merely defines the merits of the Lincolnshire Customs, but he proceeds to show in striking contrast the many objections which an Englishman must hold against the usages that have sprung up in Ireland. We can only repeat it would be advisable to keep the two systems as distinct as possible; with one we should have nothing to do, while with the other it is clear that we shall have more to do. In so long a discussion, however, some comparison between the two would naturally crop up; but until Mr. Chaplin spoke the English principle was never fairly represented. There are, indeed, so far as British agriculture elsewhere than in Ireland is concerned, but two speeches in the debate that are worth dwelling upon. If we may dismiss some other authorities with or rather without a word we must give Lord Elcho almost equal credit with Mr. Chaplin. If the one was the champion of improved farming in England, the other as ably spoke to any advancement in Scotland; while both arrived at the same conclusion from their several experiences as to the inevitable wretchedness which must arise from the cottier system of either tenure or proprietorship.

Within the last few years or months every reasonable right has been conceded to the Irish, and with the ground thus cleared, the one remaining duty of the Government must be to meet disaffection with as rigorous a rule as the necessity requires.

Mr. C. S. READ had never doubted, when once he had heard the principle on which the Bill was founded, that it would be his duty, as well as his desire, to support the second reading. He knew that under the Bill certain rights of the landlord were abrogated; but those rights had been so long in abeyance that they were of little pecuniary value, and if you could not enforce your rights it did not signify whether you possessed them or not. New rights, however, would be created, and the remedies of a good landlord against a bad tenant was

to simple that he believed, on the whole, landlords in Ireland would be gainers rather than losers by the Bill. As to the Ulster tenant-right, he thought the Government had used a merciful consideration in not extending it all over Ireland. As a tenant farmer, he knew no right so stupid and, at the same time, so unjust. It was stupid, because it professed to give a man an interest in the land, whereas it really made him bury his capital during the whole time of his occupation, and in all probability prevented him from cultivating the land as he should cultivate it. Then, too, in selling the goodwill of the farm he was selling that which he had no right to sell, and, therefore, the custom was unjust. It was wise, also, on the part of the Government not to attempt to define that which they really could not define. There were so many varieties of the custom, not only in the Province but in the same parishes, and even on the same estates, that it would have been impossible to define what Ulster tenant-right was. He supposed the Bill left things exactly as they were; but if leases had been given at a reasonable rent for the express purpose of abolishing the right, that stipulation should not be made void; and, again, if a landlord had bought out the tenant-right, a new tenant should not be able to claim a right of seven years' occupation as he would do, if ejected, under Clause 2. He hoped, also, that if a tenant had made a bad bargain, by giving twice or thrice as much for the tenant-right as it was worth, he would not be at liberty to turn round upon his landlord and so recoup himself. Cordially approving the definition of what was to be regarded as an improvement, he was glad that the presumption in favour of the landlord as to improvements should cease, and that there should be compensation for retrospective improvement; but there should be some limit of time as to these, and, even in the case of reclamation of land and buildings, 20 years back ought to be sufficient to recoup anyone for what had been done. Moreover, the tenant and not the landlord should be called upon to prove who were at the expense of retrospective improvements. His sympathies were, of course, with the Irish farmer; but he could not see the justice of the clause under which the Irish farmer was to be paid for interruption of tenancy. If the tenant had expended any money, and his prospects were interfered with, he should be paid to the full; but it was not easy to see why he should be paid for interruption of occupancy; and, admitting that he should, there was a chance, as the Bill stood, that he who lost most would get least. For example, if one man rented a cheap farm at £5 a-year, and another rented a similar farm at double the money, the one man would be paid £70 and the other only £35. As to a small farmer, he would receive much less injury than a large farmer. A holder of three or four acres of land would be all the better for being made an agricultural labourer, whereas there was no more miserable being than a broken-down farmer of 100 or 200 acres. In England, if you did not make him relieving officer, or surveyor to one of the new highway boards, or put him into some other office for which he was not at all fit, he speedily became a candidate for the Royal Agricultural Benevolent Institution. Under the Bill, the small holder, if ejected, would receive money with which he might emigrate or seek employment elsewhere; and as it was now the almost universal rule in Ireland to give money to an ejected tenant of this description, the Bill merely legalised a custom. The hon. member (Mr. Samuelson) had quoted from Dr. Voelcker as to small farmers in Belgium; but he should have quoted the conclusion of the writer, that their earnings were lower than those of an agricultural labourer. He (Mr. Read) was greatly in favour of agricultural leases, which ought to be given in all cases where you could find an enterprising and a wealthy tenant; but indiscriminate leases in small holdings would be an injury rather than a benefit. He was told that the Irish people repudiated the provision in the Bill that agricultural leases of thirty-one years were to stop litigation. If that were so, the Irish were the most unreasonable people in the world; and if a landlord said to a man, "I will give you a thirty years' lease, with compensation for unexhausted improvements, at a rent which cannot be extravagant, because it must be submitted to the court," and the tenant was still dissatisfied, he (Mr. Read) would not try to make him satisfied. Would it not be well that at the expiration of the thirty years those parties should be treated more as civilized beings, and should be allowed to contract themselves out of the provisions of the Bill? There was one

remark which he wished also to make on that portion of the measure which related to the creation of small freeholders. It would not, in his opinion, answer, because it could not be made to pay. Poets, politicians, and philosophers always looked on small freeholders as a very happy class of men; but he regarded them, as a rule, as most miserable; and it would not, he thought, do to try to bolster up a system which was gradually dying out merely because it did not pay. If a man happened to be the owner of 100 or 200 acres of land which he farmed himself, he invariably found that he could not make above three per cent. on the money which was invested in the fee-simple, whereas he could make eight or ten per cent. if he invested as a tenant. The result was that he sold his land when he could, and became a farmer on a larger scale. He might illustrate his argument by his own case. He was a little freeholder, and he had a small farm which he let, while he rented a large one. If it were not for the law of entail he should sell the little freehold; and he might observe, in passing, that when persons talked about the law of entail operating to keep large estates together, they should remember that several small estates were protected by that law from being snapped up by some large proprietor. He must express his most cordial concurrence with the right hon. and learned gentleman, the member for the University of Dublin, when he said that what Ireland wanted was not so much the creation of a peasant proprietary as a greater number of landed gentry. It struck him that in that country there was no middle class. There were the owners of very large estates and small squires; tremendous land-agents in Dublin, with their offices all over the country, and insignificant, miserable bailiffs who did the work for them. There were also great graziers occupying 2,000 or 3,000 acres of land and cottier farmers, but he looked in vain for those men with 200 or 300 acres of land who farmed and who constituted the bone and sinew of England. There were in Ireland large cattle dealers and little men who dealt in pigs and poultry, immense stores in the cities, and hardly anything between them and the little retail shops. What was wanted, therefore, in Ireland was, he believed, the creation of a middle class, which could never be created until life and property were more secure in that country. Now, when hon. and learned gentlemen differed about points of law it would be very presumptuous in a practical farmer to pronounce which side was right and which wrong, but he must nevertheless say that the custom as between landlord and tenant in Ireland was, as far as he could learn, precisely the same as in England, the difference, if any at all, being in favour of the Irish tenant. There were, for instance, more leases in Ireland, and when the Attorney-General talked about Derbyshire and Lincolnshire tenant-right, he would merely observe in reply, that in the large majority of counties in England there was no tenant-right at all, and that in Norfolk no shadow of a custom of that kind existed. Irish members might, however, say, "You have covenants in Norfolk, which we look upon in the light of a compensation for unexhausted improvements." Those, however, constituted simply a reservation which was made by the landlord for his own benefit and the benefit of the estate, so that the outgoing tenant should at the expiration of his tenancy leave the roots and hay and straw to be paid for at a certain valuation. But what did the Irish tenant do? He sold out everything at the full market price, whereas the English tenant was bound to leave those things which he had mentioned on the farm at the consuming price, which was only two-thirds of their value. He did not mean to say that the English system was right and the Irish wrong, but the Irish tenant, he thought, had the advantage at least in that respect. He should like, he might add, when leases were introduced into Ireland, that some little better definition should be given of the rotation of cropping, and that the tenants would be good enough after they had signed a lease to stick to it. There was one remark in the opening speech of the Prime Minister in which he could not concur, and that was when he showed the increase of rental in different parts of England to show how agriculture had prospered in recent years. In a great number of instances it would be found that in consequence of the development of minerals and manufactures the rental had increased, while in other parts of the country the liberal expenditure of capital in the first instance by the landlord, and in the second place by the tenant, had produced a similar result. That was no doubt the case both in England and Scotland, but looking at Ireland he found

land there was as cheaply rented as in any country in the South and West of Europe, and infinitely more cheaply than the land either in Scotland or in this country. He believed on the whole that the bill of the Government was calculated to do a great deal of good. He did not suppose it would satisfy the Irish tenant farmers as a class. He for one should not attempt to give them all or even half they asked, but he should be very happy to give them all they deserved, and the present bill would, in his opinion, do them ample justice.

Lord ELCHO: After listening last night to the speech of my right hon. friend the member for Lisakeard, and also this evening to the speech of the hon. gentleman who has just sat down, my memory goes back a few years, and a flood of varied recollections comes over me ("Hear," and a laugh). I congratulate my right hon. friend at the head of the Government on having obtained the hearty and ardent support of my right hon. friend the member for Lisakeard for this measure. My right hon. friend last night made, if I may so call it, his baptismal cry—it was his first speech in this House since he passed through the baptism of a dissolution; and when I heard him, without any criticism of any sort or kind, praise the Bill of the Government, the conclusion I came to was that his regeneration had been by total immersion (laughter). My hon. friend the member for Galway told us that he lately returned from the East, and that his path there had been marked by skeletons—not the skeletons, I hope, of his former sentiments (a laugh). I had read that in his pilgrimage he visited the residence of the ancient poet-king of Israel, and there renounced independence and all its works on his knees (laughter); but I am glad to find from his speech this evening that, after all his roving, he still retains this amount of independence, that, while giving his cordial support to the second reading of this Bill, he does not fail not only to criticise it, but to produce what is to some extent a rival scheme to that of the Government ("Hear," and a laugh). For myself, I am not an Irishman, or an Irish proprietor, and I cannot profess to speak as one conversant with Irish habits or ways. Therefore I do not attempt to discuss with my hon. friend (Mr. Gregory) the rival measure that he has laid before us. I should not have ventured to obtrude myself in this debate were it not that as a Scotch member I see in this Bill principles so novel, so sweeping, so revolutionary in their character, so totally opposed to anything we have ever seen in the shape of legislation up to this time in this House, that I feel bound to enter my independent protest (Hear, hear). Do not let it be supposed that I am hostile to legislation. I agree with my hon. friend (Mr. Gregory) in thinking it necessary that this question should be settled speedily, in the interest of both landlords and tenants. A measure on this subject became necessary when it was reported by the Devon Commission as being so; it became inevitable when Bill after Bill—the "skeletons" of which my hon. friend has spoken was brought into this House, and when my right hon. friend at the head of the Government said, with his enthusiasm and eloquence, on taking the reins of power, that this was one of the questions for the settlement of which he went into office. But for myself I will only further add that there is no man in this House who more heartily sympathizes with the concluding passage of my right hon. friend's speech, in which he expressed a hope that this Bill would produce blessings on Ireland. I am sure there is not a member of this House who, however he may criticise the provisions of this Bill, does not heartily wish that in this Session we may at last bridge over the Irish difficulty, and tie the Irish people to us by ties stronger than those of law and empire. But I think we should approach this question undeterred by agrarian outrages from going liberally into the subject of tenant-right, and uninfluenced by the exaggerated language or the confounding views of some of those who advocate the tenant's cause. On the other hand, we should not go into this question in any way scared by that Fenianism which has of recent years sprung up. The Secretary for Ireland has pointed to what was the state of things four years ago, and he said a great advance had since been made. Sir, I should like to go back four years—to the time when there was in this country a Minister as powerful and as able as my right hon. friend, who had besides the advantage of being an Irish proprietor with a well-managed estate. He epitomized this Irish question by saying that "tenant-right was landlord-wrong" (Hear, hear). We ought to look at this Bill from a landlord's as well as a tenant's point

of view, and we ought to see what there is in this Bill that comes under the head of landlord wrong, for there are in this Bill principles which to a certain extent do wrong to the landlord's of Ireland. I am told that the provisions of this Bill will lead to the growing up of tenant-right, under certain circumstances, after it has been bought out by the landlord. I know that view is taken by some of the Ulster landlords. The whole question of tenant-right must appear to persons on this side of St. George's Channel as being a matter which it would be very questionable policy to establish, especially when a person who is acknowledged to be one of the best Irish landlords (Lord Dufferin) has bought up the tenant-right on his estate, because he thought it inconsistent with the proper and beneficial management of the land (Hear, hear). I am told that the abuses of that system are carried to such an extent that on the estate of Lord Waterford, in the north of Ireland, forty or fifty years' purchase is given for the land. We may guess what a miserable existence must be that of the tenants, and how deeply indebted they must be to those of whom they borrow the money (Hear, hear). To a stranger looking at this question, it appears to be a landlord-wrong that, as to claims for compensation, you should throw upon the landlord the *onus probandi*; that he has not made the improvements. I can understand it being required that by one or the other the proof should be given, but I cannot understand that it should be thrown wholly on the landlord, especially when, as regards buildings and the reclamation of land, there is no limitation of time. As far as the provisions of the Bill go, there is no much limit, and you might go back to the Deluge, which was, I presume, the time when land began to be reclaimed (laughter). Again, the provisions as to cottiers appear to me to be a landlord-wrong, because the Bill enables tenants, but not landlords, to give land to cottiers. With regard to purchase, if the House wishes to lend money to enable tenants to buy estates, I should be the last person to object. Parliament has lent money to landlords to enable them to drain their property, and on the same principle money might be lent to tenants to enable them to purchase estates when they can do so. But I am told that if an Irish proprietor has a mortgage on his property, the mortgage or bond-holder can force him to sell in the Encumbered Estates Court, and if the tenants choose to combine they can force him to sell at any price which they may offer, for no one else dare step in and bid more money (Hear, hear). These are points which appear to me to be deserving of consideration in Committee on this Bill. But there is another point. What will be the effect of this Bill not only upon Irish, but also upon English and Scotch landlords? (Hear, hear). It will affect property of all kinds, whether funded or landed, and it will affect employers of labour. Again, it interferes with contracts and gives compensation for what is called "disturbance" (Hear, hear); and to these two points I wish to direct the attention of the House. The question of contracts divides itself into two parts—you forbid contracts and you regulate them. To forbid contracts appears to me to be a novel principle, and one which goes directly in the teeth not only of recent legislation, but of legislation which we are promised this Session. In coming here to-night I passed the house where for two years I sat on a Commission for inquiring into Trades Unions, and that Commission unanimously came to the conclusion that in these days of free-trade and free contract, it was not right that any class of men should be prevented from combining to get what they could, and to make their bargain with their employer, and a Bill embodying, I presume, the views of that Committee is to be brought forward in this House. How can my right hon. friend reconcile the principle of forbidding agreements in this Bill with the principle of free contract in the other Bill which is to come before the House? The Secretary for Ireland gave us a gauge upon this question; he said that four years ago there was not any such proposition, but we have made a very great advance. Again, as to the regulation of contracts. The Bill proposes to regulate the length and the terms of leases and the rent, and, adding to that the clauses relating to disturbance and to ten-acre holdings, the Bill really gives what the extreme party in Ireland want—fixity of tenure, with rents regulated by the Government. I believe that no Scotchman except myself has spoken in this debate, and I am, therefore, curious to know what the Scotch members who support the Government think of the regulation of contracts. In what does that regulation consist?

You regulate the length of leases, and say that in some cases they are to be for 31 years, in others for 21 years. A 31 years' lease is to cover this, but not to cover that, yet a 21 years' lease is to cover almost everything (Hear, hear). Among the matters which a 31 years' lease is not to cover is the reclamation of land; and I should like to know what my Scotch friends can say of that. In the first place I think they would not like 31 years' leases by way of trying to raise in Ireland a condition of land tenure similar to the conditions in England and Scotland. But if they do not like 31 years' leases, how do they like leases that do not cover the reclamation of land? Every Scotchman, and almost every man who has ever crossed the Tweed, well knows the prosperous state of agriculture in Scotland, where the heather is being reclaimed, and giving way to turnip crops, oats, and wheat. The extension of cultivation in that country is due entirely to the system under which 19 years' leases cover all such improvements (Hear, hear). I hope this matter will come home to the Scotch members when we go into Committee. The hon. member for Liskeard said he could not conceive, either on the ground of expediency or on any other ground, that the effect of the clause under similar circumstances could be different in the two countries. But you may have similar results with totally different circumstances. Upon what does the limitation of agreement in Ireland rest? Upon the poverty of the tenant, upon the impossibility, from his hunger for land, of his making a proper bargain with his landlord. I remember that last year a Bill on the subject of the Game Laws was brought into this House, and that Bill interfered with contracts between landlords and tenants. I heard the argument used by an officer of the Crown that the competition for land in Scotland was so great among the agriculturists, who can farm thousands of acres, and pay thousands of pounds in rent, that the law of hypothec (or the law of distress) and the Game Laws ought to be altered, because the parties were not in a fair position, owing to that competition, to make a bargain (Hear, hear). You may have in the two countries circumstances which are materially different, but lead to precisely the same results. If you apply the principle of regulating contracts in Ireland between man and man, and thus interfere with political economy, there is no earthly reason why you should not have the same principle applied elsewhere, and only yesterday I congratulated my hon. friend who brought in that Bill on the Government having adopted his principle, and applied it in their Irish land measures. It is another of those questions which did not exist four years ago in the Bill, which, according to my right hon. friend the Chief Secretary for Ireland, was drawn up by the firm friends of Ireland in that day. But, sir, we have made a great advance. The other point to which I will refer as objectionable in principle in this Bill is what is called compensation for disturbance. Now, in the legislation of this country this principle is as novel as the principle of the State interfering with agreements between landlord and tenant. The extent to which this principle goes has been pitifully described by my right hon. friend when he said, "This Bill will prevent a man from doing what he will with his own." It may be a right principle, but it is at least a new one. For what you propose is this: If a man, for any reason, with a view to the improvement of agriculture, with a view to adding to his own farm, or to his grounds, or for any other purpose, wants his property, he has to buy it back at seven years' purchase (Hear, hear). I heard a discussion at my house the other night between two gentlemen, both of them in favour of this clause on the whole, but one of them doubted whether it would work well, because a rich tenant might go and offer the landlord seven years' compensation for the farm which a poor man possessed. And what was the answer? It was this—supposing a small farm of ten acres at a pound an acre; the person who wished to get it would have to pay £70 in the first place for disturbance; there would, perhaps, be £30 more as compensation for improvements, and then to my surprise I heard that it would take from £30 to £40 more to clear away the fences (a laugh). What a state of agriculture that must be where on ten acres it would take £30 or £40 to clear away the fences! And that is the state of agriculture which you wish to stereotype and perpetuate (Hear, hear). I heard last night, in a speech of my right hon. friend, a very graphic description of two contracting parties, in which the one went about with double-barrelled guns, while the other crept behind a hedge to shoot him. What must have struck

every person when he heard that account was, what a shame that such a scandal should be suffered to exist (Hear). If you have not maintained law and order in Ireland, if you have not given that security to life and property which is the prime cause why Government exists, and therefore you say the whole law of contracts, and of the relations between landlord and tenant, is to be interfered with, it seems to me the most monstrous argument I ever heard uttered in the House of Commons (Hear, hear). With reference to this compensation for disturbance, I want to know where it is to stop? There has been a great deal of "disturbance" proposed by the Secretary of State for War the other day (cheers). He is disturbing the officers of the army, and yet he did not seem inclined to give them seven years' compensation (renewed cheers). But there is another class. As to the rich class of officers, like the landlords, my right hon. friend may come down on them; but there is a poorer class, a class somewhat in an analogous position to that of the tenants in Ireland, and that is the soldiers (Hear, hear). How did the soldiers that you are dismissing now enlist? For 12 years, with the power of going on for nine years more, and at the end of the 21 they were to be entitled to a pension. But they are liable to be dismissed at any moment if the army is reduced (cheers). And now my right hon. friend, with the view of helping the Chancellor of the Exchequer to a surplus of £5,000,000, strikes off 12,000 men at a time when there is great distress in the country (Hear, hear), at a time when the papers are full of various schemes of emigration which have found their way into this House (cheers). These men had a prospect after 21 years' service of 8d. or 1s. a day, but my right hon. friend strikes them off without any compensation (Hear, hear). But if you give compensation in the one case why not in the other, more especially when there is this stronger claim in favour of the soldier, that the soldier whom you send away uncompensated is a shootee (much laughter), while the tenant in Ireland whom you are going to compensate is a shooter (renewed laughter and cheers). I say these are very wild doctrines which have found their way into this Bill, and again I apply the gauge of the right hon. gentleman the Secretary for Ireland—"They were not in the Irish Land Bill four years ago, but we have made a great advance since then." And why? I can attribute it only to two things. I look upon these features in the Bill as the product of what I may call sentiment with saltpetre—that is to say, I believe that my right hon. friend, with his warm heart, kindly feelings, and impulsive nature, has been carried away by the wild deeds that have been done in Ireland from the sound views of political economy which he imbibed under Sir R. Peel, and that he thinks he is doing a kindly act to those men by establishing principles for their sake which ought never to have been mentioned in this House, and which I hope will not be found in this Bill when it is read a third time (Hear, hear). Now, any views of my own I naturally felt would require corroboration, and, therefore, I did this, and I think my right hon. friend will admit that the opinions I have got are sound. I sent one copy of the Bill to a well-known, first-class Edinburgh lawyer, quite conversant with the management of estates. I sent another to a country solicitor—what we call a writer—in one of the most agricultural counties in Scotland, who does more business with farmers, perhaps, than anybody else, and who is thoroughly conversant with everything connected with land. And lastly, I sent a copy to a gentleman, a Scotch proprietor, conversant with the management of land in Scotland, and who has also had the management of land in England. I said to these gentlemen, "Look at this Bill, at the principles you find in it, and give an opinion as to what you think." If the House wishes I will read the opinions I have received, because I think them the most valuable that can be got (Hear, hear). The Edinburgh lawyer says:

"There is danger of legislation for the exceptional state of things in Ireland, that it should familiarize men's minds with a state of things between landlord and tenant that would be destructive in England or Scotland. The landlord is not to be left really proprietor of the land, but the 'Court' is to take the part of proprietor. The bondholder is ignored. Rules issued by the Privy Council may protect him, but the Bill does not; landlord and tenant and Court agree upon a price which may be insufficient to meet the claim of the mortgagee. The preference given to the charge of

annuity of £6. 10s. per cent. on the land for money advanced by the Board of Works for improvements, &c., is an unjust provision for mortgagees."

(Hear, hear.) The country solicitor says:

"May be land has been let at a low rent in consideration of the tenant making improvements, or other such cases, but this is a compulsory power on the owner to make compensation without usage or contract, or without it ever having been contemplated by either party during the contract—it is a violation of the law of contracts; an entirely new principle in jurisprudence. This legislation for the future, according to certain fixed details only, is a violation of the rights of property, of the rights of the public, and a direct interference with the principles of free trade (Hear). The results would be injurious in a general sense. Altogether, the subjects for which compensation are allowed are too varied and undefined; rights of free trade are violated, contracts treated as waste, and the law upset."

The Scotch proprietor, who has also had the management of land in England, says:

"The first consequence would be to sow broadcast over the land the seeds of universal litigation, embittering instead of smoothing over the hostilities between landlord and tenant; hostilities which it is the direct interest of the lawyers and priests to keep awake. The machinery will probably be found inadequate for the vast mass of disputes that will come before it, and at the end of a few years we shall find the Courts choked with work, discontent as ripe as ever, fresh litigation necessary. The case being desperate, the remedy must be extraordinary, but any direct violation of the rights of property in land must in the end intensify the evil. My prescription would be contract. Coerce, if you cannot persuade, all who have to do with land to make their bargains by written agreement, by putting at a legal disadvantage whoever neglects doing so. And provide proper means for enforcing such agreements, and for teaching the Irish, if we can, the meaning and value of legal obligation. Their perverted views on this subject are at the bottom, not of the land difficulty only, but of all the other disorders in the country."

There is one more voice from Scotland to which I think my right hon. friend will listen with some deference. Among the many Scotch proprietors I bethought me of one who had property analogous to that of Irish proprietors—I mean Lord Lovat. I have been often on his estates, and there in Inverness-shire you see cultivation of the richest kind between some of the wildest parts of Scotland. Lord Lovat says: "I think, on the whole, the Irish Land Bill is a good one for that country under its present circumstances" (Cheers from the Ministerial benches). I don't say otherwise. I vote for the second reading (A laugh). I said so. I object only to two of its principles, and those principles I shall take every opportunity of voting against. You might as well give compensation for a disturbance from the Treasury bench (laughter). Indeed, I am not quite sure that my right hon. friend had not that in view, because he has fixed for the compensation to be paid to a certain class of tenants "a sum not exceeding two years' rent," and in recent times two years has been the length of time after which my right hon. friend has been disturbed from the Treasury bench (renewed laughter). Lord Lovat says:

"I think, on the whole, the Irish Land Bill is a good one for that country under its present circumstances, but there are some points on which it might be amended. I approve tenant-right being paid by the landlord where the tenant has paid it on entry to his farm, and there it should end. A 31 years' lease should cover all improvements on land, building, &c. I think 30 years is too long a period to go back for improvements—ten years would be quite enough. Unexhausted manures, if allowed for at all, should not exceed three years, and be very distinctly defined, otherwise it is only opening the door for the rogue to take advantage of the honest man. I do not approve agricultural leases being longer than 15 or 19 years. In my experience, both on my own estates and elsewhere, I have always found more improvement made on 15 or 19 than on 31 years' leases. Improvements are always made in the first five or seven years of the lease. In all leases made after the passing of this Act landlords and tenants should be allowed to contract together."

I thank the House for having listened to these extracts; I think they are of value considering the sources whence they

come; and perhaps the most valuable is that of Lord Lovat, who is a practical owner of land (Hear, hear). But these are only the opinions of practical men who are engaged in dealing with land, and I should wish, if the House will bear with me for a moment longer, to fortify my objection to certain principles of the Bill as contrary to sound legislation by the opinions of some greater authority than Lord Lovat whom I have quoted. I would present to the House one or two passages from speeches of a philosopher, sage, and orator, which, I think, bear out the view I am taking, and to which I would desire the attention of the House, and particularly of Her Majesty's Government (Hear, hear). I find it stated as follows in a speech made in this House in the year 1866:

"I hold it is a retrograde notion of jurisprudence to pass laws to limit the power of contract between landlord and tenant. I hold this introduction of a compulsory term into voluntary contracts to be a blunder, a solecism. All these attempts against nature, against the laws of political economy, and against that natural law which binds men by the contracts they make, must in the nature of things recoil, and the person whom you mean to benefit is injured by them. I have no doubt myself that in Ireland, more than anywhere else, it is necessary our legislation should be founded on principles perfectly broad, perfectly well ascertained, perfectly defensible upon the most abstruse philosophical grounds. You cannot give up principle without encouraging those dreams of reconquering land which has been taken from them. You must take your stand upon something; that something ought to be truth, honesty, and sound principle. If it is necessary to maintain them in England, it is ten times more necessary to adhere to them with punctilious accuracy in Ireland."

That, as I have said, was spoken in 1866, but in 1868 another speech was made, and I look to see if any change has come over the views which in 1866 I looked upon as being wise to a degree. In this latter speech, then, I find these words:

"As regards the laws of political economy, I believe they are the same on both sides of the Channel. As far as the right of private property goes, I would be no party to do anything in Ireland I would not do in England. There is an oasis in the desert of politics upon which we may safely rest, and that is afforded us by the principles of political economy."

I need hardly tell the House that the speeches from which I have quoted extracts were delivered by the present Chancellor of the Exchequer (Hear, hear, and laughter). They were two very remarkable orations, and when delivered had a remarkable effect upon the House, for it was, indeed, refreshing to be drenched with so much common sense, sound reason, and political economy (Hear, hear). I would particularly call the attention of the House to the last passage, in which the right hon. gentleman says: "There is an oasis in the desert of politics upon which we may safely rest, and that is afforded us by the principles of political economy." I regret that my right hon. friend has left that oasis. I regret it on his account personally, for I have a great friendship for my right hon. friend, but I should have regretted it on the nation's account less if he had left this oasis and gone out into the desert alone with all the sins of *Hansard* on his head (a laugh). But he has not done this. He has gone into the desert in goodly company, for the strongest Cabinet we have had for some years in this country has gone out into the desert under the guidance of my right hon. friend—and where will that guidance lead them to? (Opposition cheers). If we are to judge by the passage I have quoted, it can only lead to legislation for England and in Scotland similar to that which is proposed for Ireland (Hear, hear), and it is to this that I wish the attention of the landed proprietors, whether from England or from Scotland, who sit behind my right hon. friend; for the Chancellor of the Exchequer is a man who, I am certain, from his determination, his logical faculty, and his courage, would not have left the oasis and gone out into the desert unless he saw it would lead directly to similar legislation in England and in Scotland—for he says, "I will be no party to do anything in Ireland I would not do in England" (Hear, hear). I thank the House for having listened to me with patience (Hear). I have thought it my duty to speak out straightforwardly on this question, because I hold it to be more important at the present moment than it has been at any other time in the history of this country, that we should be careful how we deal with property

(Hear, hear). Ideas germinate fast in the present time in this country. Those who last year maintained that the way in which the House was dealing with the Irish Church Establishment would react upon England and Scotland were laughed at by the supporters of the Bill, who wished, supporting it, to dull their consciences and hide their heads in the sand in the hope of thereby warding off, or, at any rate, of not seeing, the coming danger (Hear). But what have we this year. A motion has already been laid upon the table of the House by an hon. gentleman from Wales, proposing to deal with the Welsh Church as the Irish Church was already being dealt with; and last Wednesday the House rejected a Bill for practically knocking on the head the Scotch Church under the specious pretence of dealing with church-rates, there being no such thing in Scotland (Hear, hear and a laugh). During the debate on the Irish Church Bill it was said by some that if the House sanctioned the mode of dealing with corporate property proposed in the Bill it would not be long before private property would be similarly dealt with. The statement was combed by the supporters of the Bill; out now, after so short a time has elapsed, a measure is introduced proposing to deal with the property of individuals in a manner such as has never yet been brought before Parliament (Hear, hear). Shall I give another reason why at this time we should be careful how we deal with property? (Hear, hear). In this country there is at this time a class agitation getting up on this question of the land. It is called the Land and Labour League. The members call themselves, I believe, the L.L.L.'s; but, in my opinion, they ought to be styled the "Lack-Land Looters" (laughter); for what is it that they propose? It is simply that the State should acquire land, paying in State Bonds, which are subsequently to be cancelled (Hear, hear, and laughter). That is, I believe, the programme of the "Lack-Land Looters" (laughter). Now, supposing you gentlemen from manufacturing districts were to admit this principle, what would be the result? (Hear, hear). Take the case of you moneyed men (laughter)—you who lend money, the bankers in this House (Hear, hear). I want to know whether, if I borrowed money from you at 4 per cent.—and it is very difficult to get it at that sum—and you, finding you could obtain 5 per cent. elsewhere, called it in, I am to have any compensation for disturbance (laughter), and, if not, why not? (renewed laughter). But perhaps hon. gentlemen may think that landed property and property which exists in the shape of money ought to be dealt with on a totally different principle. Should this be the case, I would ask the House to consider whether the time is the most fitting one at which to commence experiments *in corpore vili* upon the landlords (Hear, hear). What I wish very much is that my right hon. friend opposite (Mr. Gladstone), who has an influence with the people which nobody can deny, would by his influence and his eloquence effectually stamp out all this pestilent stuff (cheers). Let it be known that there are certain rules with regard to property which must be maintained, for the ultimate result of such action as I have referred to would be that communism would rise up in this country as it has risen up in France, and as it would rise still farther in that country, but for the fact that they have there a man who says, "*L'ordre j'en réponds*" (cheers). I want, sir, my right hon. friend to do in this House and in this country what across the Channel is done by bayonets (Hear, hear). There was a time when he was silent on the Reform question, and as a result heads were smashed, illegal meetings were held, and all order and law were shaken in this country (Hear, hear). Upon this Irish question he was adjured last year in both Houses not to say what he would do, but what he would not do; and why did we make the appeal? (Hear). Because we knew full well that in dealing with a highly imaginative and excitable race like the Irish they would run riot if they thought they were not to be treated in a spirit of perfect fairness (Hear, hear). A very similar state of things prevails at the present moment. I appeal to my right hon. friend to look into this question of the land, and to stamp the very beginnings of Communism under his heel. It is because I see the principles of Communism in this Bill in the way in which it deals with property, in contracts, and in compensation for disturbance that I condemn its provisions in the way I have done. Why should you depart from sound and just principles? What do you gain by doing so? What has been the result of all that you have done? Those whom you hoped to conciliate, peaking through their accredited organs in this House, the

mover and seconder of this amendment, and the hon. member for the city of Kilkenny, throw the Bill back into your faces; your sacrifices have been in vain; they have not pacified the unruly; they have not satisfied the unreasonable. But you will say, if we strike out of the Bill what you object to, and if we do not give compensation for disturbance, you leave nothing whatever in the Bill. I deny that. Go back to the gauge of my right hon. friend the Secretary of State for Ireland, and you will find that you still leave in the Bill more than was contained in the Bill of the Irish members (Hear). What will you leave? You will leave the legislative recognition of usage, and the power of enforcing payment for goodwill, whether goodwill or custom has prevailed throughout the length and breadth of the land. You will give compensation for improvements, past, present, and future; you will give simplification of remedies, encouragement of contracts by forcing these to a certain extent; and you will establish courts of equity and arbitration. Therefore, I say, when you have struck out of the Bill all that is objectionable in principle, as applying to England and Scotland, you will still leave in it, as applicable to Ireland, all that ought to satisfy reason and justice; and those whom it will fail to satisfy are those by whom confiscation is demanded, and who will not be satisfied with anything less (Hear, hear). In conclusion, I have only to say that if, as my right hon. friend told us in his opening speech, the Irish are, of all the people upon the earth the people that love justice most, I say do justly and fear not; trust to their sense of justice, be just to all—to the landlord as well as the tenant (Hear, hear). In endeavouring to conciliate Ireland do not break through principles which you know to be economically sound, but have the courage to prove your title to the government of this country and to the confidence of Parliament by the firm, unswerving maintenance of right (loud cheers).

Mr. CHAPLIN agreed with his noble friend the member for Haddingtonshire (Lord Elcho) that few measures of greater importance, and few that more affected the interests of the empire, than the Bill now before the House, had ever been submitted to Parliament. He thought, therefore, that in the discussion of the measure it was desirable to avoid anything like party warmth or party feeling. He should consider the Bill under two heads—namely, on that of its own merits, and that of the particular wants of the country for which it was intended. He thought that security of tenure was what every tenant in England or in Ireland or elsewhere was entitled to; but, as many persons differed on the question how that security could be best attained, it would not be out of place to consider how it was secured in this country and in Scotland. The right hon. gentleman at the head of the Government, comparing the increase of rents in England and Scotland as compared with the increase of rents in Ireland, referred to the system of granting leases in Scotland. Now, among the best authorities there was a difference of opinion as to the effects of that system. The right hon. gentleman was mistaken when he attributed the state of things to the difference between the feelings that existed in England as compared with Ireland. No one would deny that there existed in England, as a rule, a feeling of a kind and cordial nature between landlords and their tenants, and he should be sorry to think that those kindly and cordial feelings did not exist in Ireland also, and he could say that, with his limited experience of that country, he had known thousands of cases where it existed. But in England there was something beyond that, especially in those parts of the country where agriculture was carried to the highest perfection, which was entirely wanting in Ireland—namely, a marked, distinct, and accurate system, capable of being enforced at law, assuring the tenant that he would be amply repaid for everything that he had laid out in the cultivation of the soil in the event of his being ejected from his farm. He would take as an instance the custom that prevailed in the county which he had the honour of representing—and he did not think he should be accused of undue partiality when he asserted that his county stood pre-eminent for the excellence of its cultivation. In no county was the science of farming carried to such perfection, or capital more liberally expended upon the soil, and nowhere was the identity of interest between landlord and tenant more fully recognised, or were more cordial and kindly feelings entertained between them. And yet this was a county where leases for a term of years were practically unknown, or, at all events, were very rare. It would merely weary the House were he

to enter into details with respect to the various arrangements. They were many, and necessarily so, because in themselves the operations of farming were of a very multitudinous character. Under those arrangements compensation was amply provided for, everything that could be laid out in fair farming, the amount of compensation to be paid being fixed by a valuer or valuers, and a third party being called in to act as umpire if necessary. So simple was that operation, and so well known its results, that an appeal to law or a dispute scarcely ever arose; and not the least advantage of the system was that it applied with equal effect to large or small farms. By this means security of tenure and its attendant beneficial results were attained; and although no man could more heartily acknowledge than he did the cordial and kindly feelings mutually entertained with respect to each other by the landlords and the tenants, yet in his judgment those feelings were mainly due to the uniform operation of the just and effectual system of tenant-right to which he had referred (Hear). Under the operation of that system perfect freedom of contract and perfect security of tenure were obtained without any interference whatever on the part of the Legislature. He confessed he should have greatly rejoiced had it been found possible to apply some system of a similar nature to Ireland. But when the right hon. and learned gentleman the Attorney-General told them that was exactly what this Bill proposed to do—namely to recognise custom in Ireland as it was recognised in England—he must venture to point out that there was this very important distinction, that while on the one hand the custom in England was admitted to be good, the custom in Ulster was admitted to be as bad as a custom could be. With the permission of the House he should wish to compare for a moment the means by which the Bill proposed to give security of tenure to the tenants of Ireland; and here he should be met at once with the reply that the circumstances of the two countries were so different that no comparison could be instituted between them. He was fully aware that there was a marked difference between the amount of competition for land in England and in Ireland, but that was a point with which he would deal presently, and he should for the present deal with this measure as one only for giving the tenant security of tenure. In the first place he regarded this Bill as being an interference on the part of the Legislature for the benefit of one class and against the interests of another—in fact it was a distinct instance of class legislation carried out in the most undeniable manner. Young as he was in political experience, he could not believe that such a proceeding could be otherwise than dangerous in the highest degree (Hear, hear). Based, as it was said, upon the principle of interfering as little as possible with the freedom of contract, the Bill proceeded to inflict most severe blows at the freedom of contract of, at all events, one of the parties. The very terms of the leases and agreements, and the very rent itself, were to be settled, not between the two contracting parties, but by the tenant on the one hand and some third intervening party on the other, and that without any regard to what might happen to be the wishes of the landlord upon the subject (Hear). And here, as he was upon the subject of rent, he might be permitted to point out one of not the least defects in the Bill. One of its provisions was that the rent was to be settled by a Court of Arbitration. Well, the moment Parliament had by its Court of Arbitration fixed the amount of rent and had selected the tenant, the tenant ceased to be the landlord's and it became their duty to guarantee him the punctual payment of the rent so fixed. Now, competition for land in Ireland was great, and excessive competition meant high rent, and the Courts of Arbitration will be bound to take the best offer, because they would be dealing with property which did not belong to them, but to somebody else. If they were to compel a landlord to take the worse of two offers, they would simply be taking money out of his pocket to put it into that of somebody else who had no right to it whatever. And what happened then? The tenant fell into arrears, and was ejected for non-payment of rent. But ejection for non-payment of rent under the Bill was not a disturbance except where the rent was excessive, and the plea that the rent was excessive could not be put forward in the case he assumed, because Parliament had fixed it themselves. So far, therefore, it appeared to him that either the Bill was worthless, or else that the Government would be compelled to do that under it which would be simply destroying the landlord altogether, and to proclaim to the world that free trade in land in Ireland was

to be scattered to the winds, and to renounce in that country at once and for ever the principles which hon. members opposite had been advocating during the whole of their political life (Hear, hear); and when the Solicitor-General for Ireland bantered the hon. members sitting on the Opposition side of the House with their new-found attachment for Free Trade and its principles, it was much more worthy of remark that he should so suddenly have abandoned those principles (Hear). He trusted the joviality of the hon. and learned gentleman was not combined with sickness ("Hear," and a laugh). Then there was the scale of damages inserted in the Bill, which included compensation for disturbance of occupancy as well as for improvements. Compensation for loss of improvements was an intelligible proposition, but he confessed that when he heard so much of loss of occupancy he scarcely knew what it meant, because if the tenant lost so greatly by the cessation of his occupancy, he must have correspondingly gained when his landlord first permitted him to commence it, and, therefore, if the tenant were to be compensated for loss of occupancy the landlord ought to be compensated when the tenant comes in—what was sauce for the goose was sauce for the gander (Hear, and a laugh). Another main objection to the provisions of the Bill altering the relations between the landlord and tenant was, that it would take from the landlord the power of making any distinction between the idle and the negligent and the good and the industrious farmers, who would henceforth be placed upon exactly the same footing in every respect (Hear). Then, again, the Bill placed obstructions in the way of a good landlord making improvement, and, in fact, the promoters of the Bill appeared to be under the impression that a good and generous landlord did not exist in Ireland (Hear, hear). That such was the case he did not believe, and it was not even asserted by those inveterate spouters who clamoured for that which they knew could never be given to them, namely: the transference of property, its rights, its privileges, and, moreover, that, its duties from one class to another, which was the real meaning of fixity of tenure (Hear, hear). As regards the question of giving compensation for permanent improvements he asked whether it was fair that the Act should be retrospective. Those who had purchased under a Parliamentary or any other sound title had bought land having upon it certain buildings, and he had calculated the value of these buildings in the price he had paid; but if the Bill became law, these buildings would be taken away from him, and given to another without any sort of compensation—a proceeding which would be nothing short of confiscation (Hear, hear). In considering the whole of this question, he had often put to himself the question, "Why is there a land question at all in Ireland?" because until this question was properly answered it was impossible to decide upon any effectual remedy. One striking difference between England and Ireland was that while in England the farms were large and the improvements were made by the landlords, in Ireland the holdings were small and the improvements were made by the tenants. And this was necessarily so, because if an Irish landlord were obliged to build homesteads for every tenant, he would have to spend as much upon farm buildings as the value of the fee-simple. The existence of small farms was unquestionably an evil, and it would be better both for landlord and peasant if they were consolidated; for the peasant especially, because a large piece of land held by a farmer having capital would be better worked, and the poor tenant-farmer who now earns a precarious and scanty living would be able to command continual and remunerative employment. A tract of two or three hundred acres divided into three and five-acre farms by high banks, which, true to the Irish character, were called dykes ("No, no!"), would be occupied by a large number of tenants utterly incapable of improving them from want of knowledge, energy, or skill; the farming upon these small holdings was worse than anyone could possibly conceive who had not seen it; indeed, a friend of his, after travelling over a considerable portion of the land, had come to the conclusion that the dock and thistle were sacred weeds in Ireland (laughter, and "He was a Scotch farmer"). Possibly the view was opposed to the prejudices of the Irish people, but he firmly believed that very many of the Irish would prefer to remain in comparative discomfort, provided they were also allowed to remain idle; for when it was recollected that the ordinary English labourer cultivates not less than 25 acres

of land each it was evident that small farms of 15 acres and less in Ireland were maintained only to allow small Irish farmers to live in idleness. Was this the end which the hon. member for Kilkenny, and those who thought with him, had been endeavouring to accomplish for so long a time? His answer to the hon. member was that to require the land of Ireland to be cut up and subdivided and cultivated in the worst and most inconvenient manner for the purpose of giving a fictitious means of support to the surplus population was just as reasonable as to demand the banishment of science and machinery from English manufactories in order to give more occupation to those who were in want of employment. He would put a case to show the absurdity of the hon. member's argument. Let the House, for instance, take the case of an English farm of 1,000 acres, and apply to it the standard of Irish labour and work in connexion with a three-acre farm. Why, it would require something like 330 labourers for the due cultivation of the soil; and he certainly fancied that his hon. friends the members for Norfolk and Leicestershire, who might be supposed to have a practical acquaintance with agriculture, would agree with him that if 330 labourers were employed at 15s. a-week on 1,000 acres it would require a tenant of singular skill and capacity, to say nothing of rent, to make much profit out of his farm (Hear, hear). Ought we to refrain from doing that which it was clearly our duty to do in the way of making improvements out of regard either to their love of sloth and ignorance, or to their attachment to the mud cabins and farms where their forefathers had existed for generations before them and in a similar state of discomfort? He believed that no people on the face of the earth had so passionate an attachment for home as was developed in the Irish nation, and he should not presume to say a word in disparagement of so good and so natural a feeling; but he was compelled to remark that to be brought up and to continue to live in the homes of their ancestors was a privilege which in all countries and among all classes of society was denied to all except a favoured few. Why should Ireland be made an exception to this very general rule? (Hear, hear). He would now come to what he regarded as the very germ and root of this Irish question—viz., the difference between the two countries arising from the fact that while in England there were many and various means of employment, in Ireland it was to the soil alone that the people had been accustomed to look for their means of support (Hear, hear). It was, in his judgment, impossible for any one who had listened with attention to the remarkable speech delivered by the Prime Minister on the introduction of the Bill to avoid coming to the conclusion that all the difficulties encountered at every turn were mainly referrible to the great competition for land in Ireland and the dire necessity of obtaining it which destroyed all practical freedom of contract between landlord and tenant in that country. To this must be attributed so many of the evils of which Ireland justly complained. This was, indeed, the incubus which weighed so heavily on Ireland, and, to quote the words of the right hon. gentleman the First Lord of the Treasury, this was "the dark star which was for ever brooding over that unfortunate country." This was the substantial grievance, in the absence of which, as the right hon. member for Liskeard (Mr. Horsman) had pointed out, agitation in Ireland could no longer exist. It was the fruitful source of all the evils and miseries connected with land in Ireland. Now he had always believed that when a disease was known to exist the wise physician was he who, after first ascertaining its cause, proceeded to apply the remedy which appeared to him the most efficacious and the most likely to go straight to the root of the complaint (Hear, hear). Therefore, he asked, in what sentence, in what line, in what syllable of this Bill was this overpowering Irish evil attempted to be dealt with at all? (Hear). He objected to the Bill as a measure of policy, because it left the chief evils of the country altogether untouched. If then, he were asked how it happened that with these opinions he did not intend to oppose the second reading of the Bill, he would at once answer that he should offer no opposition to it because he believed it to be essentially a measure of detail, which he hoped might be sweeping changed in Committee, because he recognized to the full the need of something being immediately done with regard to Ireland—a need so dire as almost to appal the heart of the bravest—and because he was in dread lest he should

see the blood of her Majesty's subjects in Ireland flowing like water. Let it not be supposed that this was the language of undue exaggeration on his part, for he believed that no man could foresee what might be the effect of even appearing to thwart without reason the reason and temper of the Irish people (Hear). As to whose unpardonable silence that necessity for immediate action in the first place arose, and daily and almost hourly increased, he would not now state his opinion; but he must express his firm conviction that all the perennial attempts at legislation for Ireland—more baleful when they succeeded, as was the case last year, than when they proved signal failures—had done immense harm by raising the expectations of a restless and an excitable people, expectations which could in no event be fulfilled. Her Majesty's Government, long after having made up their minds as to what their policy would be, had culpably concealed it from the Irish people, and had thus increased the excitement which prevailed. Indeed, they had by this reticence done more to retard the civilization and progress of the country than 1,000 Fenian outrages or all the Riband societies in Ireland (Hear, hear). At the present moment Ireland was in a state that was scarcely ever known before. Agrarian outrages were of constant occurrence; the demon of murder was stalking unchecked through the land, and no species of property, nor even life itself, was secure ("Oh, oh!" and "Hear, hear"). Open rebellion was at our doors because open sedition was allowed to be everywhere openly taught; and he sincerely believed these to be the immediate results—deny it who could—of the unhappy, ill-fated, and deplorable policy adopted by Her Majesty's Government towards Ireland (cheers).

HEREFORDSHIRE AGRICULTURAL SOCIETY.

The adjourned meeting of the Herefordshire Agricultural Society, in reference to an amalgamation with the Worcestershire, Gloucestershire, or other Agricultural Societies, was held at Hereford, the Rev. Archer Clive in the chair.

The Worcestershire Society held a general meeting on Saturday last, to which the following report was presented from a committee appointed to consider the question: "The committee have had under their consideration the question of an amalgamation of the Society with those of adjoining counties, and have been in communication with Hereford and Gloucester, and believe that great advantages would be derived from a union with those counties. They have at present received no definite expression of opinion on the subject from Hereford or Gloucester, but will continue to give the matter their attention, and trust they may shortly be able to report favourably. They would, however, add that in their opinion it would not be desirable to join either county separately."

In reference to the amalgamation of the smaller Societies with the county Society, it appeared that efforts had been made to effect such amalgamation but had failed.

Having counted the letters—including some received at the former meeting—in which a positive opinion was expressed, aye or nay, the Secretary said there were 11 for amalgamation and 10 against it.

The CHAIRMAN: What is the position of the Worcestershire Society?

Mr. TAYLOR (Showle): It is much worse off than ours.

The CHAIRMAN thought he might take the sense of the meeting. He would therefore ask, Shall we appoint a committee to consider the expediency of conferring with the counties of Worcestershire and Gloucestershire with a view to amalgamation? Those gentlemen who are in favour of our taking that course will hold up their right hands.

Four hands only were held up, and the negative was then put, and carried by a very large majority.

LINCOLNSHIRE AGRICULTURAL SOCIETY.—

Professor Voelcker has been engaged as consulting chemist of this society, to analyze manures, &c., for the members on terms similar to those charged to members of the Royal Agricultural Society of England. Dr. Voelcker, who has also undertaken to deliver a lecture when called upon to do so, will receive a fee of £25 for his services for the current year.

THE CENTRAL FARMERS' CLUB.

SEWAGE FARMING.

The monthly meeting of the Club was held on Monday evening, March 7, in the Club Rooms, at the Salisbury Hotel, Fleet-street, the subject for consideration, standing in the name of Mr. J. Bailey Denton, being "On Sewage Farming, and the position of sewer authorities in relation to lands to which sewage is applied." There was a very full attendance.

The Chairman, Mr. J. HOWARD, M.P., said: The subject for discussion was sewage farming—a question of very great importance, and one which grew in importance from year to year. He should not anticipate what Mr. Bailey Denton was about to say, but would simply observe that the farmers of England had been twitted by the press and by Mr. Meehi with indifference and apathy upon the question. If there ever was a case of putting the saddle upon the wrong horse it was this (Hear, hear). The question of town sewage was one for municipalities and corporations to deal with first; the farmer could not apply the sewage until the towns brought it to him. With these observations he would only further congratulate the Club that the paper was to be read by a gentleman who was so conversant with the subject, and who had taken so much pains to master its details (cheers).

Mr. J. BAILEY DENTON read the following paper:—

Being a member of the Committee of the British Association for inquiring into the treatment and utilization of sewage, I shall be careful to avoid all controversial points upon which I may, with the rest of the committee, be required to report; my present object being to elicit the views of others rather than to pronounce opinions of my own. I propose to confine my observations this evening to the practice of sewage^{*} farming, where it may be called into existence by circumstances which render it the best mode of dealing with town refuse. I may premise that, having entered this Club at its opening in 1843, and being therefore well acquainted with the high practical character of its members, I shall avoid dwelling upon those general agricultural laws which rule in sewage as in ordinary farming, and shall address myself at once to the particular object of my paper, which as a new branch of farming, demands special treatment. In sewage farming special treatment, or, in other words, "technical knowledge," is admitted by all persons to be essential to success, and when endorsing this general opinion I do not wish to imply that in ordinary farming technical education is unnecessary, simply because it has been an art in which this country has excelled from the time of the aborigines with a sort of delusion pervading the popular mind that any one may become a farmer when he pleases, and that the practice itself consists only of the enjoyable action of the limbs without any exercise of the brain. I have been led into this little digression, while professing an intention to go direct to my subject, by observing in a recent address to the members of the Edinburgh Philosophical Institution by Dr. Lyon Playfair—who you will remember was some 20 years back consulting chemist to the Royal Agricultural Society of England, and is now one of its honorary members—an expression to the effect that, if improvement is to be effected in Ireland it must not stop at agriculture, but must extend to the secondary education of the people in *practical subjects*, conveying the impression, if his words are rightly reported, that he considered the art of agriculture an occupation requiring no special education. It is curious, however, to observe that, when impressing upon the manufacturing workmen the advantage of mixing brains with manual labour, he borrowed from agriculture itself an illustration to support his argument—an illustration which is very pertinent to my subject of this evening. He likened science to a perennial stream with a bountiful supply of fertil-

izing waters, and its application in the handicraft of trade to the work of irrigation, though, as the metaphor was somewhat poetically expressed, the Professor doubtless had in his mind the bright moving waters of rippling brooks rather than the dirty fluid of sewage with which I am about to deal. Strange though it be, it is nevertheless a fact, that although the learned Professor so naturally and pleasantly applied the metaphor, and made himself understood in doing so, there is not one in a hundred of the teachers in our national and infant schools who could explain in popular terms of simple English the scientific principles involved in the operation of ordinary irrigation, let alone the complex operation involved when water is mixed with human excreta and trade refuse with which we shall presently have to deal. Still, I believe it is the failure to inculcate upon the young rural labourers' minds such information as this, that is keeping agriculture behind the other arts. I could not resist the opportunity of expressing this opinion when about to speak on a branch of farming in which every one admits the value of technical teaching; for I believe that education in the common things of the farm is just as much required in ordinary as in sewage farming, and would advance the position of rural labourers, by enabling them to understand the reasons for what they do, and so improve the quality of their labour, more than all the talk of philanthropy, and all the threats of introducing among them the practices of trades' unions.

But to address myself to sewage farming; I will endeavour at the outset to show why it is an object especially worthy your attention. I think you will agree with me that, whatever may be the future result of chemical discovery in the treatment of sewage by deodorization and precipitation, or by any other means of separating from the water "the ingredients which do not belong to it," with a view to render it innocuous when it reaches the rivers, it is very improbable that those large cities and towns in which the comfort of water as a means of transporting sewage has been experienced will abandon the advantage, and you will most probably agree with me too in believing that many of those towns will resort to sewage irrigation as the most ready and the least objectionable mode of disposing of their discharged refuse. I say "the most ready and the least objectionable mode" in consequence of the large quantity of water which the sewers discharge. To realise the actual quantity, it would only be necessary to point out that in a town of which the water supply and influx of subsoil water into the sewers together reach 50 gallons a head of the population, there will be sufficient fluid from 100,000 people to cover 10 acres of land 23 inches deep every day of 24 hours, and this mass of water, weighing 2,232 tons, must be purified before it reaches the rivers. Fifty gallons of water weighs 500 lbs., while the excreta of each average individual weighs only 3 lbs., and though it would be easy enough to deal by chemical processes with the excreta alone, it is quite another matter when dealing with water nearly 167 times heavier. The difficulty is much reduced where the number of persons in a community does not exceed a few hundreds, and where, as in villages, the quantity of water used is comparatively small, owing to the absence of a public supply. In such cases, much is to be said in favour of the use of earth as a means of transporting excretal matter. In villages where a system of scavenging for the provision and removal of the necessary earth can be readily organised, the dry earth system of sewerage may possibly be better than that of water, though even in such cases the difficulty of getting rid of the slops of dwellings must stand in the way of its general adoption. While upon this point, I may usefully quote the

* Sewage is described by Professor Way in his report on the Deodorization of Sewage appended to the second report of the Sewage Commission, to be "water holding in solution and suspension ingredients which do not belong to it as water, and which render it objectionable to the senses of

sight and smell, injurious to health, and unfit for drinking and domestic purposes." By the Sewage Committee of the British Association it was decided to interpret the word "sewage," as "meaning any refuse from human habitations that may affect the public health."

opinion of the Rivers Pollution Commissioners expressed in their last report, just issued. They say, after describing what has been done with dry earth in certain places, that "In all these cases, however, the chamber slope are kept separate; and independently of that the success depends, not upon the people using the privies, but upon an officer whose duty it is to look after them and keep them clean. Even at Hallow (in Buckinghamshire) one man is set apart for this work. Elsewhere we have known earth closets introduced for the use of cottagers accustomed to the old privy seat and cesspool, and, requiring special service and attention which the average man or woman will not give, they soon become filthy and offensive. Add to these circumstances the enormous aggravation of all the difficulties of the plan when not fifty, but fifty thousand households have to be provided with the necessary appliances, and induced to work them properly, and we can have no hesitation in pronouncing the dry earth system, however suitable for institutions, villages, and camps, where personal or official regulations can be enforced, entirely unfitted to the circumstances of large towns." The Rivers Pollution Commissioners evidently consider, therefore, that the dry earth system of sewerage is not likely to interfere very greatly with the prospects of sewage farming. With respect to the various chemical processes of deodorization and precipitation which have been proposed, the Commissioners say, "The operations of the chemist have been directed chiefly to the soluble constituents of sewage, and have had for their object either the precipitation in a solid form of the valuable but offensive ingredients, so as to convert them into portable manure; or, secondly, the rendering them inoffensive by the action of disinfectants. Although these operations have not been altogether unsuccessful, they have hitherto entirely failed in purifying average sewage to such an extent as to render it admissible into running water. We have formed this opinion both from observations of the polluting effect of such chemically purified sewage upon the streams into which it was admitted, and from the amount of putrescible organic matter revealed by the chemical analysis of the sewage after treatment." These being the last official opinions formed and promulgated, they are worth attention, but at the same time we must not forget that such are the inexhaustible resources of chemistry, that the impossibility of to-day may be the realisation of to-morrow. Most interesting information on the chemical question is published in this last report of the Rivers Pollution Commission to which I have just referred, and the same may be said of a previous publication of the details of experiments carried out for the Sewage Commission in 1861, under the direction of Professor Way, entitled, "Deodorization of Sewage." They are appended to the second report of that Commission. The opinions expressed in both these reports cannot fail to remove any latent belief that sewage irrigation is to be very readily superseded by other modes of disposing of town refuse.

To appreciate the extent which sewage farming may extend in this country, I may mention that there are in England alone 12 towns, excluding the metropolis, with populations above 100,000, 18 towns between 100,000 and 50,000, 137 towns between 50,000 and 10,000, and 360 between 10,000 and 2,000. Now assuming, for our present purpose, that half these towns ultimately determine to utilize their refuse by irrigation, then the number of acres of land that will be withdrawn from ordinary farming and applied to sewage farming will swell into a considerable area. It is true that authorities differ upon the number of acres required to purify sewage, and turn it to the most profitable account. My own opinion is that a much more extended experience than we have yet had must be gained before we can draw the line between the necessary sanitary demands for purification, possibly requiring only a few acres, and the expediences of profitable farming rendering it wise to spread the sewage over a wide area. What has been already done, however, affords a variety of examples not very conclusive in result, but very suggestive for future guidance.

At Bedford, for instance, where the surface soil and subsoil are free and open, the sewage of upwards of 18,000 persons is at present applied to 55 acres of land only, which is after the rate of 300 persons to the acre. No fluid passes off the surface: it is all absorbed. Our Chairman will tell us, however, that it is the intention of the town authorities to extend the area of utilization to 200 acres, not perhaps so

much because the sewage is not at present sufficiently purified by the vegetation and filtration due to this limited area, but because the sewer authorities of the town believe a much greater profit may be obtained from a greater number of acres. It is not improbable, too, that there exists at Bedford the natural belief that a narrow area of surface, and limited means of filtration such as quoted may in time render the effluent water from the subsoil extremely polluted. At present it appears, from the published analyses, that vegetation and filtration together are "sufficient as a sanitary agency," though limited to the extent mentioned.

At Carlisle, where the soil is also very open in character, the sewage of 22,000 people, is distributed over about 100 acres of land devoted to permanent pasture. This is after the rate of 220 persons to an acre. The whole of the sewage is absorbed and percolates down to the level of the springs which help to maintain the rivers Calder and Eden.

At Croydon the sewage from about 35,000 persons is applied to 260 acres of free, open soil at Beddington, giving a proportion of 134 persons to the acre; the sewage from about another 4,000 persons is utilised on about 30 acres of low-lying clay land at South Norwood, giving a proportion of 133 persons to the acre. The comparative effects of the two operations upon the purification of the sewage is very intelligibly shown by the following analyses of the Rivers Pollution Commissioners. They are intended to show the influence of season upon the purification of sewage by irrigation, on the light soils of Beddington (Croydon), and the clay of Norwood.

RESULTS OF ANALYSES EXPRESSED IN PARTS PER 100,000.

Average composition of effluent Sewage Water.	Total solid matters in solution.	Organic Carbon.	Organic Nitrogen.	Ammonia.	Nitrogen as Nitrate and Nitrites.	Total combined Nitrogen.	Chlorine.
Spring—							
Norwood	88.1	1.500	.303	.816	.230	1.194	8.37
Croydon	35.4	.594	.104	.072	.225	.388	2.32
Summer—							
Norwood	88.6	1.883	.312	.462	.657	1.361	11.03
Croydon	35.4	.607	.128	.069	.155	.300	2.57
Autumn—							
Norwood	87.0	1.349	.203	.635	.734	1.629	8.94
Croydon	45.1	.680	.138	.185	.589	.702	3.20
Winter—							
Norwood	87.0	1.271	.273	.676	.813	1.255	7.71
Croydon	40.6	.612	.145	.204	.533	.846	2.72
After 7 days' frost—							
Norwood	88.8	1.356	.413	1.145	.156	1.534	8.84
Croydon	45.6	.591	.239	.371	.448	.992	2.89

The Commissioners, in speaking of the clay land at Norwood, say that the results of analyses "show that the effluent sewage was, except in a few instances, so far cleansed even upon this heavy clay soil, as to be admissible into running water without nuisance."

At Aldershot (where the sewage is all derived from the camp, consisting of adults) the sewage of 7,000 persons is distributed over 80 acres of poor sandy soil, in which peroxide of iron pervails, or 88 soldiers supply the sewage for an acre of land, which is equal to a much larger proportion of an average population consisting of men, women, and children.

At Tavistock, where the soil is a loam with a subsoil of pebbles, the population is 9,000, and the number of acres irrigated 90, or exactly one acre to 100 persons.

At Worthing, where the soil is also of a free description, 8,000 persons supply the sewage for 95 acres of land, of which 53 are cultivated and 42 are permanent grass. This is after the rate of 85 persons to the acre.

At Malvern, where the soil is partly a gravel and partly a clay, the sewage from about 5,000 persons is applied to 84 acres of land, of which 54 are permanent pasture and 30 arable. This is after the rate of 60 persons to an acre.

At Banbury, where the soil is clay, the number of acres under irrigation is 120, and the population being 11,000 the proportion is 1 acre to 92 persons. The condition of the effluent water here is not so satisfactory as in other cases, but this is no doubt owing to the fact that the under-drainage of the land is imperfect, and allows the sewage only partially filtered to descend into the drain, and so pass into the rivers.

At Rugby, where the soil is of a mixed character, partaking of gravel on a clay sub-soil, 65 acres of land have been taken on lease as sufficient to satisfy upwards of 8,000 inhabitants; and as this town has long been under treatment for sewage irrigation, past experience has probably had influence in deciding the quantity of land taken. The proportion is 125 persons to the acre.

There are about 30 towns in England where the sewage has been applied by irrigation, but the experiences of the before-named towns may be taken as the best examples at present existing by which to arrive at some idea of the quantity of land required, though, as I have stated before, we must trust to future experience to decide the question definitively. The *late* Rivers' Commissioners stated that the quantity of land required should not be less than one acre to every 150 inhabitants contributing the sewage, but the deduction from the instances given would be that 100 persons to the acre better represents the mean quantity required, putting light and heavy land together, and taking an average of populations consisting of men, women, and children. I have myself hitherto considered that one acre of free soil to 150 persons, and one acre of clay soil, if well drained, to 100 persons, would suffice; but to arrive at a general view of the matter, it would perhaps be better to reduce the latter proportion to 75 persons to the acre, and take 100 persons to the acre as the mean of various soils. To make sewage farming as profitable as it is capable of being made, it is necessary to have something like 33 per cent. of extra land beyond that used for irrigation—that is, one acre of unsewaged land to three acres sewaged—so as to allow of periodical rests to the sewaged portion by an alternation of cropping. To provide, also, for the gradual increase of population, additional land capable of receiving sewage should be provided. If, therefore, we take 50 per cent. in addition to the amount actually required to meet both these considerations, we arrive at the least extent of land which will sooner or later be abstracted from ordinary and devoted to sewage farming. Upon this data, and supposing that half the towns I have classified by their populations adopt irrigation as the mode of utilizing their sewage, the quantity of land required will amount to at least 100,000 acres. Up to the present moment, owing to the scarcity of sewage farmers, and the disinclination there exists to devote attention to a business about which so little is known, and about which so much doubt has been entertained, the sewer authorities in different towns resorting to irrigation have become farmers on behalf of the residents they represent. In such cases the duties have devolved principally on the surveyor of the Local Board, who, possibly knowing nothing of practical agriculture and receiving a fixed and probably not a very high salary for the performance of his duties, is hardly the person to develop the most profitable results. Sewage farming being a new thing too, the individual members of corporations or local boards of health have been led to take part in it; but, as gratuitous services are seldom very effective, it is likely that no greater profit will attend such superintendence than that of the local surveyor, and, consequently, the time cannot be very distant when sewage farms will be offered for hire in the same way as ordinary farms. As present there are very few ordinary farms to be let for which there are not always many applicants, even where the prospect of profit is very limited; and I think, therefore, you will agree with me that it will not be inopportune for this Club to consider at once whether the sons of the present generation of farmers can give their attention to better objects than sewage farming and the technical information required for it, particularly as the extension of this new branch of agriculture must reduce the chances of obtaining ordinary farms by withdrawing land from one purpose to apply it to another.

THE RENTING VALUE OF SEWAGE FARMS.—But if sewage farming is to become the occupation of a special class of men who prepare themselves for it, it is clearly desirable to come to some definite understanding as to the basis upon which the renting value of sewage-irrigated land should be calculated, for rent is always the first item of consideration with all farmers, and at the present moment there is much confusion prevailing upon the point. This arises from the supposition which prevails in some places that the return from the sewage farm should cover the cost of conveying the sewage from the sewer mouth to the land, forgetting that the obligation lies with the town to dispose of its own refuse in

an unobjectionable manner, irrespective of the cost. It may be a stroke of good policy to adopt a mode of disposal which will afford some return, though it is obviously a fallacy to connect the cost of the work with the rent of the land. Indeed so manifest is this view that it seems hardly necessary to remind you that the sewage in some cases may be applied to land lying below a town by simple gravitation at a trifling cost limited to the delivering conduit; while in others it may have to be lifted to a considerable height above the town, when there will not only be the cost of the necessary machinery but the current outlay of pumping and maintenance. And this may be the case when the productive capability of the land and the quality of the sewage may be the same in both instances. The true basis of rent consists of three elements—the productive value of the land with reference to the sewage to be applied to it; the proximity of the farm to the market for the sale of its produce; and the quality of the sewage delivered to it. The two first elements should be considered together and the last independently.

As far as experience has yet gone, the soil most suitable for the production of sewage crops is a light, free soil, though I am disposed to believe that when we have had more practice we shall find the clays equally available. Upon this point, I believe, our friend Dr. Voelcker, the farmer's chemist *par excellence*, is of opinion that clays, deeply cultivated and properly drained, may be more productive under sewage treatment than free soils; though we know as a fact that the poor, sandy soils to which the sewage of Edinburgh has been already applied have produced herbage which was sold last year at a price ranging from £1 17s. 6d. to £19 per acre; while in the more repulsive soils of the Bagshot Sands at Aldershot, which are mixed with peroxide of iron, Mr. Blackburn has let land for garden purposes at £5 an acre, while before the sewage was taken to it the same land was literally not worth half-a-crown. These sandy soils were naturally so sterile that it would appear it matters not what is the quality of the soil which becomes the matrix for the sewage so long as it is easily penetrated by the roots of vegetation. This is an important point where suburban land is very expensive and poor land is within reach. Another consideration will have its influence too, when determining the description of soil to be utilized, an opinion having recently gained ground that a poor free soil operates as an oxidiser of sewage at least as well as a rich loam or clay, even though the latter may be as completely disintegrated as it is capable of becoming by effective under-drainage.

If free soils naturally drained, and clays pulverized by under-drainage, are equally available, the proximity of the sewage farm to a ready market becomes the first desideratum. It so happens that the vegetation best produced by the use of sewage is that which will find customers in the town from whence the sewage is obtained if within easy reach. Italian rye-grass, roots, and market-garden produce can be sold as soon as they are fit for use to the townspeople; and it is for this reason that the land devoted to sewage in the vicinity of towns must rank as accommodation land, and the price if purchased, or the rent if leased, rise accordingly. And although the late Rivers Commission laid it down as a rule that sewaged farms should not exist within a mile of towns, it is not likely that this limit will appreciably reduce the price if valley lands of high quality are compulsorily taken. If therefore by raising the sewage to a height above the town it can be applied to poor and cheap land, it may be well worth the attention and consideration of sewer authorities, whether they may not spend less money in raising the sewage to such land than in the purchase of valuable valley land which may be reached by simple gravitation. Thus, for instance, a town requiring 150 acres for a sewage farm can afford to spend without loss £16,000 in pumping arrangements to raise its sewage to a height above (including the capitalization of current expense) if the cost of the high-lying land does not exceed £50 an acre and the price of the valley land is as much as £150 an acre. This question may be looked at in another light by comparing land to be leased instead of purchased under the two conditions supposed. The land in the valley may be worth from £3 to £5 an acre, while land above may be obtainable at £1 an acre. The difference of rent in these two cases would be at least £500 a-year, which if capitalized at 30 years' purchase would be £15,000; and the advantage of raising the sewage above the town would not be limited to the saving in the first cost or rent of land, for it is more than probable that the effect would,

in most cases, be to avoid all objections of a residential character.

On these grounds it appears reasonable that the rent of the land, irrespective of the sewage, and independent of buildings and the special preparation of the land constituting the sewage farm, should be the same as that of accommodation land in the vicinity of the town furnishing the sewage, which will vary from £2 10s. to £5 an acre.

VALUE OF SEWAGE.—The value of sewage depends in the first place upon the extent to which the excretal matter voided by the population is diluted by the water supplied to the town for domestic purposes and by influx of surface and subsoil water into the sewers; next, by the nature of the trades and occupations of the inhabitants; and lastly by the capability of the land to assimilate the fertilizing matter and to benefit by the quantity of fluid with which it is mixed.

Whilst the quantity of excretal matter per head is constant, the quantity of water supplied to different towns varies very considerably. For instance, at Bedford the daily supply is 15 gallons per head, at Carlisle 40 gallons, at Croydon 45 gallons, at Malvern 5 gallons, at Banbury 21 gallons, at Worthing 45 gallons, and at Rugby 25 gallons. The influx of subsoil water varies in different towns, even in a much greater degree than the water supply, and though it varies at different seasons according to the subterranean water pervading the district, it does not change like that entering the sewers from the surface which is directly dependent upon the rainfall, and sometimes over-loads the sewers, while at other times there is no influx at all. The great increase due to subsoil water alone is proved by the fact that, while at Banbury, with a daily water supply amounting to 230,000 gallons, the dry-weather discharge from the sewers is only 300,000, at Bedford, where the water supply does not exceed 150,000 gallons, and where the surface and storm waters are excluded from the sewers, the daily discharge from the sewers amounts to at least 500,000, and has been reported to be as much as 797,350 gallons daily. The quantity and quality of town refuse, other than and in addition to human excreta, vary also considerably in different towns, almost as much as the quantity of water supplied to the inhabitants and the influx of subsoil water. For instance, in some large towns there may be one prevailing character of industry, such as the woollen, silk, and chemical works of the Lancashire towns, the tanneries of Stockport and Warrington, and the breweries of Burton and Romford. In small towns there may be an extensive brewery, or one special trade which may proportionately affect the discharged refuse quite as much as a general trade in larger towns. I do not propose to go very deeply into the chemical analyses and chemists' calculations that have been published from time to time showing the value of sewage discharged from different towns. I abstain for two reasons—first, because the details are rather too technical, being learnedly expressed in the dead languages, and next, because, although we are under obligation to chemical science for the fundamental data by which to arrive at the existence and comparative powers of fertilizing agents, we cannot altogether rely upon the estimates of value. It is for this reason, I presume, that we have got into the habit of speaking of chemists' estimates of fertilizing matter as "theoretical values" although they are based on the actual price of guano and other saleable manures.

You will perhaps remember that Messrs. Hofmann and Witt, in the evidence they gave before the referees appointed to inquire into the sewerage of the metropolis, estimated the annual total voidings of an adult male to be worth 11s. 9½d.* Dr. Thudichum more recently gave the value of the urine alone of adult males at 10s. 8½d.† Messrs. Lawes and Gilbert esti-

mated the amount of nitrogen in the food of an average individual, which was founded upon the calculation of 86 different dietaries arranged in 15 classes according to sex, age, activity, of mode of life, and other circumstances, to be equivalent to rather less than 12½lbs. of ammonia, from which of course a deduction had to be made for the nitrogen retained in the body and for loss in various ways. Messrs. Lawes and Way, after quoting this estimate, state in their report appended to the third report of the Sewage Commission, that "upon the whole, therefore, it is concluded that the amount of ammonia contributed to the sewer water by each individual of a mixed population of both sexes and all ages is pretty certainly more than 10lbs. per annum, as formerly assumed, but probably less than 12½lbs. But it is not the human excretal matters of the resident population that alone contribute to the value of the sewage; to these must be added the fractional part of the excretal matters of horses, cows, dogs, and other animals; of the refuse from slaughter houses, of soot and of the matters derived from the abrasion of the streets, and also the refuse matters from certain manufacturing processes. So far as existing information bears upon the point, it would appear probable that not more than 12½lbs. of ammonia are contributed annually to the sewers from all sources per head of the population." Mr. John Chalmers Morton, in his "Agricultural Experience of 300,000 tons of North London sewage," having brought forward the results of the chemical analyses of Messrs. Lawes and Gilbert, says, "These then are the leading points to which the attempt to estimate the value of the sewage of a town have led. 200 ounces of ammonia per annum pass through the water-closet of every individual of a population, the proportions of other ingredients, potash and phosphoric acid, corresponding fairly with that of its ammonia or nitrogen to the wants of most of our cultivated crops; that of potash, however, being generally deficient." To bring these analyses to bear practically upon the treatment and utilization of sewage, engineers and chemists have combined to shift their figures from one denomination to another. Instead of referring to ounces of ammonia and pounds of excretal matter voided by each average member of the population, the whole refuse has been brought into tons of sewage discharged from a town. Having arrived at 8s. 4d. (which is 100 pence) as the average value per head of the excretal matter voided by a population—i.e., the 12½lbs. of ammonia—Messrs. Lawes and Way assume that by one means or another—by the supply of water for domestic and trade purposes, by the influx of surface-waters, and by the accretion of subsoil waters—the maximum quantity of sewage discharged from a town may reach 100 tons per head per annum. Thus, as 100 pence is the value of the fertilizing matter due to each head of the population, 1d. is placed upon each ton of sewage as its value also. The simplicity of the calculation would be perfect if experience showed that the excrementitious matter diluted in the proportion of 333 of water to 1 of excretal matter was really worth the money. But it is obviously the fact that, beyond the extent of dilution, which renders the sewage most acceptable to vegetation,—say 20 gallons per head,—the sewage undergoes depreciation in proportion as it is farther diluted. It stands to reason that there must be a proper limit to the dilution appropriate to different soils, and no species of sophistry in science can make it otherwise, however anxious we may be to utilize the water with which we have to contend under the present sewerage systems. Mr. Hope, the very able pioneer in sewage utilization, having satisfied himself by the analysis of Professor Way that the sewage of the northern portion of the metropolis—high and mid-level sewers—was theoretically worth 2½d. per ton, there being 8.2 grains of ammonia to the gallon in it, states his own estimate of the actual value to be 1d. per ton, and he takes 50 tons as the average annual quantity of sewage from each person, thus making the actual value 4s. 2d. per head, or half that of Messrs. Lawes and Way. But though I am also disposed, for the sake of simplicity, to take 1d. per ton as the value of sewage, I stop at a much less amount of dilution as my datum. I think that a penny should only rule when the water supply is 20 gallons a day per person, or 32½ tons per annum, and only then when the accretion of subsoil water does not increase the discharge from the sewers more than 25 per cent., which raises the discharged sewage to 40½ tons, the money value being calculated

* ADULT MALES PER HEAD PER ANNUM.

	Total solid matter.		Ammonia.	
	lbs.	lbs.	s. d.	
Urine	61	15.8	10	0½
Fæces	34	2.3	1	8½
Total	95	18.1	11	9½

† ADULT MALES PER HEAD PER ANNUM.

	Total solid matter.		Ammonia.	
	lbs.	lbs.	s. d.	
Urine alone	47	15.9	10	3½

on the water supply (32½ tons), and not on the aggregate discharge (40½ tons); for we must always bear in mind that sewage is "the refuse of human habitations," and not the water of drainage or the water of rainfall, and that therefore the measure of "sewage" is the water supply. Upon this view, while Messrs. Lawes and Way's estimate of the theoretical value of sewage is 8s. 4d., and Mr. Hope's estimate of the actual value is 4s. 2d., that which I have ventured to give will stand at 2s. 8½d. In fixing this price, I have been guided by realized results and probabilities, and have regarded sewage simply as manure supplied by sewered towns to their tenants, and have separated the return due to it from that which would arise from the land without it. In the desire to support theoretical value, we have got into some confusion on this head. There is no reason why we should regard commercially the supply of liquid sewage from a town in a different light to so much solid manure from stables in a town, with the single and great advantage that the former not only distributes itself over the land without labour, but it reaches the roots of vegetation in a ready condition for assimilation, and is therefore worth more money. Mr. Mariage, at Croydon, has shown that the full produce from his 260 acres has yielded a return of £46d. per ton for the sewage, or a fraction less than a halfpenny per ton, which is equal to 2s. 5d. per head of population, and which, after deducting rent, rates, taxes, labour, interest on capital, &c., will represent the value of the sewage (which is much doubted) at less than a farthing per ton. At Aldershot, where there is a return of £1,200 from the waste of 7,000 adults, the return per head is 3s. 4d. per annum. It is difficult to arrive at what proportion of this is due to the sewage, independent of the land and expenses, and I leave you to draw your own deductions. At Norwood 3s. 9d. per head, per annum, represents the return derived from the whole produce, while only 9d. per head represents the profit! These instances alone are sufficient to show that a penny a ton on the reduced quantity of sewage, which I have taken as my datum, is quite as much as the sewage, *per se*, is worth in the present state of our knowledge, and that this sum should be divided equally between the landlord supplying the sewage and the tenant using it. If this is right, 1s. 4½d. per head may be considered as the payment due for the sewage, and in a town of 10,000 people it would amount to £677 1s. 8d. This is equal to £8 15s. 6d. per acre, and represents the payment of the farmer for the manure of the sewaged portion of his farm. In some soils, where water is valuable after the land has appropriated a sufficiency of manure, a larger charge may be made for the sewage; but in clay soils, the retentive properties of which cannot be altogether removed by any amount of under-drainage, an excess of water should be met by a reduced charge. This is one reason why both storm and subsoil waters should be kept out of the sewers.

THE PREPARATION OF THE LAND.—I stated early in my remarks that we could not charge the sewage farm with any cost of delivering the sewage from the town to the land, implying that the outlay chargeable to the farm for works should commence from the point at which the sewage is delivered to it. Before entering upon the preparation of land for the only mode of irrigation to be recommended, let me say a few words on the systems which have each had their advocates for the time. I think I may say, positively, that sufficient experience has already been gained to lead to the conclusion that the method of irrigating by iron pipes with hydrants and hose for distribution, fails in satisfactory results, although there are some recognised authorities who still continue the practice. My friend, Mr. Mechi, I believe, is one who does so; though, seeing that Lord Essex at Watford, the Duke of Northumberland at Alnwick, as well as several others have relinquished the practice, I hardly think he would lay out a new system on the same method he now follows. Subterranean irrigation, admitting the sewage into the drains and allowing the sewage to pass out of the drains into the subsoil, I believe to be erroneous in principle: first, because it takes the fertilizing matter away from those fibrils of the roots which are ready to appropriate it; and next, because it takes the water holding the fertilizing matter in solution and suspension down into the subsoil to rise upwards and so maintain evaporation, which lowers the temperature of the bed of vegetation. The application of sewage on the surface, on the contrary, not only feeds vegetation in the way it is best able to assimilate the food contained in the sewage, but the flow of sewage over the surface has the effect common to all irrigation of raising

the temperature of the ground higher than the air above its surface, instead of lowering it as must be the case where the sewage rises upwards.

Irrigation by means of channels on the surface, is therefore, the only method open for adoption. As the surface of each farm will vary in configuration, it would answer no good purpose to go particularly into the formation of the surface. It will suffice to say that the sewage, starting from the point at which it will be delivered, will be conducted over the whole farm by open or covered conduits, with leading and minor carriers dividing the land into proper areas for distribution. If the land be steep, then the catch-water system, which is common in the hilly grounds of the West of England, will apply. The name itself explains the system quite as well as a lengthy description, as any overflow from the first carrier is caught by the second, and reapplied until the whole of the sewage has fed vegetation on the surface, and been absorbed by the soil. If the surface of the land has only a moderate fall, then the system now called the "pane and gutter system," and adopted in the first instance by Mr. Baldwin Latham at Croydon, will be called into use. The size of the panes depend upon the natural fall of the ground and the nature of the soil. The system may be thus shortly described: The sewage having been brought to the head of the field by a main carrier, and conducted down the field in the direction of the greatest fall by minor carriers, passes therefrom over the sloping surface from the upper to the lower margin, the system being perfect when the whole of the vegetation has been covered with sewage, without any escape from the surface. Where the land is nearly level it is necessary to give an artificial fall, by raising it into ridges, and depressing it into furrows in the shape of the winter irrigated land of Italy, which is called "marcite." A marcite field in Lombardy is very much like a well-formed English ridge-and-furrow field, with this difference, that instead of exhibiting, as some of our "corduroy" fields do, the "curves of beauty and grace," they are made precisely straight. The breadth of each plane or side of the ridge in Italy, where the water has very little solid matter floating in it, varies from 25 to 30 feet. The most recent illustration of this formation in England is that being carried out on Mr. Hope's farm at Romford. He says: "The result of many careful observations and experiments was that the breadth which combined the most advantages was 15 feet from ridge to furrow, and two ploughings are amply sufficient to lay the land up to the necessary slope of 1 in 25." The more porous the land the steeper must be the fall from ridge to furrow, as the object to be aimed at is that no sewage at all shall ultimately pass from the surface into the rivers or watercourses. In Italy the effluent water of irrigation is frequently applied over and over again, and it becomes richer the more frequently it is passed over the surface. It gathers fertilizing matter as it flows, and more money is paid for the last application than for the first. In England the primary object being to free the fluid of impurities as completely as possible, irrigation and filtration should go hand in hand. The necessity of so forming the irrigating surface that, with the aid of natural or artificial under-drainage, every drop of sewage shall be absorbed by the soil at the time of feeding or after it has fed vegetation, leads me to state that I believe a very erroneous impression has hitherto prevailed as to the capability of vegetation alone to purify sewage. It has been over and over again asserted that vegetation even in the dormant period of winter has the power of abstracting and appropriating in some way or other the obnoxious and fertilising portions of sewage. That it does not do so profitably has been shown to be the case by Mr. Morton, who states, in his "Agricultural Experiences of 300,000 tons of North London Sewage" before referred to, that a very large quantity of the sewage applied at Lodge Farm in January and February before the season of growth had arrived had been nearly useless, having before stated that his experience had proved to him that "it is a wasteful process to attempt to overcome the natural tendency of things." These remarks are those of an honest agriculturist looking for a return in the growth of vegetation. If sewage has passed off the surface comparatively pure, as we know has been the case, while vegetation has been dormant, the purification has been due to the absorption of the sewage at the surface, and its lateral filtration through the soil, rather than to the influence of vegetation at such times. In fact, I believe that fallow land would be nearly as serviceable for purification during winter as land upon which a plant of

Italian ryegrass existed provided there was natural or artificial under drainage. I have heard it frequently said, and by high authorities too, that clay lands devoted to sewage irrigation do not require under drainage; and I remember once hearing the foreman in charge of a well-known irrigated clay farm state that the drains were an evil rather than a benefit, because a large quantity of the sewage passed from the surface down to the drains, and so escaped to the river with the fertilizing matter wanted to retain for vegetation. It is needless to point out that the passage of the sewage from the surface carrier to the drain below was due to the too near approach of the drain to the carrier. It has long been my opinion, from observations made in draining works during the last twenty years, that with a *sufficient* bed of any soil for the sewage to pass through, it may be purified independently of surface vegetation. The question is one of quantity of the filtering material. The Rivers' Pollution Commissioners state: "The process of filtration through sand, gravel, chalk, or certain kinds of soil, if properly carried out, is the most effective means for the purification of sewage to which reference has yet been made." They also say, "Indeed irrigation as now carried out owes no inconsiderable amount of its success to the contemporaneous effect of the filtration of the sewage through the soil of the irrigated fields, for it is precisely in those cases in which the sewage is absorbed and disappears in porous land that we have observed in the effluent water from drains the most complete purifying effect." The absence of all reference to clay soils in this passage would lead us to believe that although the commissioners experimented on the brown loam from the marl stone of the lower oolites near Dursley, in Gloucestershire, and the result showed that it surpassed all other soils experimented upon in its power of purifying sewage, they reserve for future investigation and consideration the special capabilities of clay lands. The great point to aim at in preparing the land for sewage is to acquire a sufficient depth of filtering bed by drainage where it does not naturally exist. In surcharged free soils there is no difficulty, because a few deep drains will serve the purpose; but in clays, where we have to combat with the natural retentive powers of the soil and where a number of underdrains are necessary to produce disintegration, it is a more difficult matter. This, however, is a question too special in character to dwell upon now; it will be sufficient to state that, whatever drains are adopted to render the soil capable of absorbing and filtering the sewage, their position must have special reference to the way in which the surface carriers are laid out, and that if miasma is to be avoided no land should be irrigated that is not perfectly drained. While upon this point I will only add that I concur in what I believe to be an opinion expressed by Dr. Voelcker, that clays will be found as suitable for sewage irrigation as other soils if they are properly subsoiled as well as drained, for the more that is done to open the subsoil so as to render it less necessary to put the drains near together the more perfect the purification will be. The cost of laying out land for irrigation will, of course, vary with the form of the surface and the crops intended to be grown. It varies from £2 to £15 per acre. Where under-drainage is necessary the two will probably average the larger sum. If house and buildings are erected in cases where the extent of land reaches 150 acres the outlay may be doubled, and then the rentcharge to repay the outlay in 30 years may reach £300 a year; but in an average of instances £200 a year would suffice. This brings me to the third and last point,

THE RETURN FROM SEWAGE FARMING.—The crop which up to this time has commanded the greatest attention is Italian rye grass, which has been generally sown in the autumn, and has lasted two years and more; but experience is beginning now to show that it is more productive if grown for one year only. Its value as a farmer's crop consists in the extraordinary rapidity of its growth. Mr. Morton has shown that 46 tons can be produced in the year by dressings, amounting to 5,520 tons per acre, which is equal to one ton of grass from every 120 tons of sewage; while Mr. Hope states that as much as 100 tons per acre can be produced in the year from nearly the same amount of dressings, which is equal to one ton of grass for 56 tons of sewage. The value of Italian rye grass as a means of purification consists in its rapacious appetite for liquid manurial matter, causing it to start into growth earlier in the spring, and remain active later in the autumn than any other known crop. The money value of Italian rye grass will, of course, depend upon the market at

hand. It has realised upwards of £1 a ton when fresh cut, but the average price will probably be 11s. a ton, and then only when there is a constant demand for fresh cut grass. But a constant sale of Italian rye grass is not by any means certain. In the small towns of Rugby, Bedford, Banbury, and Warwick, they have, I believe, already experienced considerable difficulty in disposing of it, and at Banbury last year they sold it by auction when ready to cut for hay, the price realised in the year for the two cuttings was £11 an acre, which is considerably less than half the amount realised from Mr. Morton's quantity of 46 tons an acre, at 11s. a ton (£25 6s.). At the Lodge Farm, last year, the Hon. Mr. Petre actually produced and sold 53 acres of rye grass for £1,350, which is £25 9s. 6d. to the acre; and he had amongst his customers Messrs. Pickford and Co., the well-known carriers, who had regular supplies for their stables, and who pronounced it to be excellent horse fodder. I understand Mr. Darby, of Rugby, the well-known horse dealer, has also found Italian rye-grass excellent food for horses. Hitherto there has been some doubt upon this point, and sewage-produced grass has been almost entirely devoted to feeding cows and neat cattle. I mention it, therefore, here, as it will go some way to satisfy you that the demand will increase as the production becomes better known. Mr. Marriage, of Croydon, has, I believe, contrived to sell his fresh cut grass for 23s. a ton when carried into town; but the ordinary price on his farm has been from 13s. to 14s., when taken from the ground ready cut and weighed. This, it must be remembered, however, is near the metropolis, and the grass was therefore more likely of sale than in ordinary instances. At Norwood, last year, the rye-grass from 28 acres of land was sold in five or six cuttings for £741 0s. 6d., which is more than Mr. Petre realised at Barking, being upwards of £26 per acre.

Now that it is pretty well understood that Italian rye-grass does not remain at full profit more than a year, and that it has not the effect which people believed in purifying sewage during the winter, its pre-eminence as the best sewage crop may cease to be acknowledged. Sewage suits all roots of a succulent character; potatoes, mangolds, swedes, turnips, carrots, parsnips, kohlrabi, and sugar beet are all equally fond of it. It also suits the leguminous vegetables; cabbages of every kind seem to luxuriate in it, and vegetables of a less gross habit, such as celery, lettuces, onions, radishes, &c., all seem to thrive. The superiority of liquid sewage over farm-yard, or any other dry manure, for the growth of roots and vegetables, is that it allows of transplanting, and thus making good any delay or accidental failure up to a late period of the year. Mangolds have been transplanted as late as the end of June, and have produced a heavy crop. In fact, such is the value of a command of water in sewage that mangolds and most other roots are looked upon as a certainty. It is not over estimating the average crop of mangolds produced from sewage farming to put it at 35 tons to the acre, which will realise at least £25 at 14s. a ton. We have not had sufficient experience in kohlrabi to arrive at any average weight of crop, but there is every reason to believe it will turn out to be a most suitable one. The same may be said of swedes and turnips. Carrots and parsnips, if grown in moderate quantities, so as not to overstock the market, will realise between £30 and £40 an acre, assuming the land to be suitable to their growth. The whole of these root crops appear to require very judicious treatment in the selection of time of application, and the quantity of sewage applied, for it is easy to overdo the dressing, and to apply it at the wrong stage of growth. So with potatoes, which will probably be found the most profitable of all roots. Already upwards of £30 an acre have been made, and, considering that it is hardly possible to overdo the market with potatoes, as you may with carrots and parsnips, the anticipation will not appear unreasonable. Cabbages of various sorts have realised from £20 to £30 an acre. Onions, though we are told by the Hon. Mr. Petre they are difficult to raise, well repay the efforts to produce them; for he states in his "Notes for the year ending 31st August, 1869," that "1½ acres of white onions sown early in March, which did not look well until June, realized over £67 for the plot." I desist from further details, being content to point out the fact that in many cases it is possible to take two crops in one year, and to assure you that the figures I have given are moderate. Early peas may be directly followed by mangold, and mangold by celery, the plants being insured by the aid of a suf-

iciency of water and manure. Moreover, there is a future for sugarbeet and mangolds, which renders them of extra value. It is hoped that the one may be made into sugar, and the latter into feeding cake for stock. I place on the table a cake made from dried mangold by Mr. Hugh Smith. The crops which do not satisfactorily respond to sewage treatment are cereals. These crops have seldom exceeded in quantity what has been obtained from ordinary farmed land dressed with yard manure. It will be a very different thing with cereals when they alternate with rye-grass and roots; then the sewage left in the soil after satisfying the grass or roots will suffice to produce the heaviest crops of wheat, oats, or beans, without additional manure; and it is not at all improbable that we shall have fallow lands used as filtering beds during the winter in preparation for cereal cropping during the following summer, thus securing a fair proportion of straw. I lay great stress on the growth of straw, as I believe it will ultimately be as highly valued on a sewage farm as any other production; inasmuch as it will only be by the most profitable home consumption of sewage produce, when it cannot be advantageously sold at the proper moment, that sewage farming will reach its full profit.

To bring these various prices of produce into account and put before you the balance-sheet, I will assume that for a town of 10,000 inhabitants a farm of 150 acres is established, on 100 acres of which the sewage will be utilized. Let us further assume that with good management at least one crop is produced every year from the whole farm, and that, for the sake of simplicity of calculation, the whole is sold as it is produced. We shall then have the following figures to deal with:

RECEIPTS.		£
40 acres Italian Rye-grass (30 acres sold green at £25 an acre, 20 acres sold for hay at £12 10s.).....		750
20 acres permanent grass (10 acres for winter irrigation), at £6 an acre average.....		120
20 acres mangolds at £24 10s. an acre average		490
10 " potatoes " £25 " "		250
5 " carrots " £32 " "		160
5 " parsnips..... " £32 " "		160
10 " cabbages..... " £25 " "		250
40 " cereals (with straw) " £16 " "		640
		<hr/> £2,820

OUTGOINGS.		£
Rent, with rates and taxes	600	
Charge for sewage.....	677	
Rent-charge for preparing and draining land ...	200	
Labour, horse and hand	500	
Seeds, repair of implements, &c.....	200	
Interest on capital.....	75	— 2,252

Tenant's profit.....£568

By this statement it would appear that the tenant farmer's profit and interest on capital would be £548 a year from 150 acres of land; while the sewer authorities of a town acting as their own tenants may realize the same amount in addition to the charge for sewage (£677), making together very nearly 2s. 8½d. a head on the 10,000 persons contributing the sewage, which you will remember was datum value.

But this, perhaps, is assuming a favourable view of things: it is supposing the produce all sold, and the money all realized. I will now claim your attention to the disadvantages and drawbacks of sewage farming. In the first place the sewage farmer will be under obligation to receive and dispose of the sewage at all times of the year, whether it be profitable or not to utilize it; and when you consider that, with a town of 10,000 inhabitants using 20 gallons of water a head, there will be delivered to the farmer every day, winter and summer, 9,000 tons of sewage which must be dealt with and discharged in a pure condition, the obligation assumes a very serious aspect. If, however, filtration through land in a fallow state will sufficiently purify sewage during winter when vegetation does not want it, this difficulty will be very much reduced, and we may regard sewage farming in a different aspect. Then it will become an object of the highest importance so to devise the system of filtration that it shall operate as the best means of placing and storing the manure required for future as well growing crops. The next drawback is that of being obliged to dispose of your free-growing grass directly it is fit to cut. If

cut for use while green, there must be the customer near at hand to purchase and remove it as soon as it is ready, or it suffers considerable damage, and causes injury to the succeeding crop as well. If there be no customer, the farmer must let it stand for hay; or he may provide stock to consume it in a green state, when he departs from the simple course of disposing of the crop as soon as it is ready for sale and alters the whole system of arrangement I have assumed in my calculations. He has the alternative of selling by auction the grass when fit to cut for hay, as is done at Banbury and other places, and transfer the risk of making it to the purchasers. These difficulties are very considerable, owing to the fact that the crop is too bulky to dry in the natural way by being spread upon the surface of the ground which has produced it; it must be either wholly or partially removed to an adjacent surface or it must be artificially dried. Against these drawbacks or difficulties, however, there is the set off of prospective advantages to be gained by the adoption of a system of cropping more nearly approaching that of market gardening than I have mentioned. If onions and spring peas, lettuces, and such like vegetables are produced, my figures will sink into insignificance; or if milk is produced and sold successfully, the business assumes a different character. This I leave for future consideration. My remarks have already been too lengthy; and I have only to hope that they have been kept sufficiently close to the point to secure a profitable discussion, and that you will give me credit for placing the details in an unvarnished manner before you.

The CHAIRMAN said there were present several distinguished gentlemen who might be considered as pioneers both in the practice and science of sewage utilisation, and he was sure the meeting would be but too pleased to waive the rule of the Club which confined the discussion to members (Hear, hear). Amongst those gentlemen was Mr. Hope, who had had large experience in the application of sewage to agricultural purposes. A member of the Club, Mr. Baldwin Latham, who had likewise gained large experience on the same subject, had written a letter, in the course of which he said: "As I have unexpectedly to proceed to Berlin to-day on professional business, and as I shall be absent for at least ten days, it will be impossible for me to attend the meeting of the Farmers' Club on Monday next as I had intended. I think the sewage question is one of vital importance to the agriculturists of this country. In the sewage of our towns will be found a mine of wealth which merely requires time for its development. Every day fresh experience convinces me that the time is not far distant when towns will net a good round sum for that matter which is now cast away as worthless, and which is a source not only of considerable anxiety but the means of bringing the rivers and streams of the country into the foulest possible condition. Experience at Beddington, Norwood, and Thornton Heath, in the district of the Croydon Local Board of Health, shows that sewage may be applied to almost every description of produce. Good wheat crops, mangel, potatoes, cabbages, strawberries, celery, and a variety of other crops, have been grown with the most perfect success. I do not think it would pay to grow wheat on a sewage farm in the ordinary course of agriculture, as there are other crops which will give much greater yield under sewage treatment; and therefore the land will be probably better occupied by growing crops that will give greater returns, instead of being occupied by cereal crops. The Croydon Local Board received last year for every acre under tillage at Norwood £24 14s. They have had an offer lately from an influential person to take their sewage farm at Beddington, 270 acres only of which are under sewage culture, and for which they have been offered a rental of £3,000 per annum. The agricultural land in the neighbourhood of Beddington is certainly not worth more than from 30s. to £2 per acre. The additional rent offered, therefore, may be taken as the value of the sewage. The Local Board would not accept this offer, as they think they will be able to realise a much larger sum by working the farm themselves. At the present time much difference in opinion exists as to the expense of fitting the land for the purposes of the application of the sewage. In my experience I have had land laid out at a cost not exceeding £3 per acre, and I have had land which has cost upwards of £20 per acre. I am now laying out about 5,000 acres for the purpose of sewage irriga-

tion; and the average cost will be much less than £10 per acre. We have lately tried on our irrigation farm at Beddington some new turnwrest or turnover ploughs, which leave the land level, without ridge or furrow; and we find they work extremely well; and with such an instrument in the hands of the agriculturists, the cost of preparing land for sewage irrigation purposes will be greatly reduced. I trust you will have a very successful meeting, and that much valuable information will be elicited. When I look back on the short space of time when Mr. Rawlinson and myself were found the only engineers who advocated the application of the sewage to land, as the means not only of realising the value of the fertilizing matter, but as the only means by which sewage can be purified before it is turned into the fresh watercourses of the country, and when I consider the vast number of persons that since that time have taken up this question, I take it as a criterion of the progress which has been made, and which augurs well for the future success of the system of applying sewage to land."

Mr. Horz said he rose with great diffidence to speak for the first time to the Farmers' Club, and should have hesitated to do so had not Mr. Bailey Denton called attention to his operations in connection with sewage farming. The first point he would notice in the most interesting paper which had been read, was the statement made as to the number of persons per acre. As a rule a great deal of misapprehension existed upon this subject. Persons frequently talked of the number of tons of sewage per acre, and the number of persons representing those tons, when they intended to speak of the particular acres under crop in a given season, leaving out of consideration those other acres which either were in crop the year before, or would come into rotation the following year. Mr. Denton had pointed out that a large addition must be made of not less than 50 per cent. to the acres actually under sewage, in estimating the number of acres proportioned to a town. His own experience was that a smaller number of persons should be applied to each acre, his average being not more than 40 or 45 persons per cent., including the land which perhaps received no sewage at all in the given year. Dr. Voelcker was perfectly right from the chemist's point of view in saying that clay land was the best of all for the reception of sewage; but unfortunately it was also the nastiest upon which to grow market-garden crops. Cabbages and other similar plants refused to grow at all, and flooding a piece of land in the face of a north wind, in the expectation of getting cauliflowers, was at the best a disheartening operation (laughter). Dilution he regarded with comparative indifference. Many persons thought town sewage was too diluted, and that in point of fact it was questionable whether it did not do more harm than good. The first thing he did when he took the sewage of the town of Romford was to stipulate for an additional dilution of something like 90 gallons per head per diem at his pleasure in summer. The sewage at Romford, although it had a regular water supply, was so strong and thick that it would injure all young plants, not chemically but physically. Thirty gallons per head per day represented 48 tons per annum, or in round numbers 50 tons. That was approximately the dilution to be expected from the London sewage when the whole system was completed. This was the most suitable quantity so far as he could discover. With regard to the estimates formed by chemists of the value of sewage per ton, or per head of the population, he was himself originally much misled by the chemists, who were themselves misled from want of farming experience. They were afraid to trust their own chemical knowledge, and they fancied that by the application of so much "washy stuff" as the farmers called it, they would injure many crops, and they did not see their way to applying it at all times of the year. The explanation was that at that time they had not had sufficient experience. They, therefore, halved their theoretical value, and put it at 1d. per ton. He himself had a little skirmishing with his friend Mr. Mechi, on the matter, and he had now very great pleasure in admitting that that gentleman's estimate of 2d. per ton was much nearer the mark. He (Mr. Hope) would repeat what he stated at the Society of Arts, and to the basis of his opinion upon this point. He had samples taken every half hour, night and day, for 203 days on the high and middle level sewers of London in 1865, from March to September, and the average analysis gave about eight grains of ammonia to the gallon, or 2d. per ton. It was quite clear that if you put a certain quantity of ammonia and other chemical manures into the ground, and did not somehow get them

out again with a proper proportion of profit, it must be the fault of the man who put them in. His experience was that there was nothing in nature to militate against such an operation. Land should be so arranged that with a proper proportion of Italian rye-grass common meadow land, and all descriptions of roots and market-garden produce, there was always a sufficient proportion of ground in a condition to receive sewage. He received all the sewage from Romford, and had of course to stand his chance of all suits in Chancery for nuisances, and he was not a bit afraid of the result, because he had long become convinced that he could not only apply it without injury or offence to the town's people, but also with a handsome profit out of every ton of sewage. He was sowing ten acres of onions which would not receive any sewage during their growth, the land having been enriched in its fallow state. He himself could see no reason for the belief amongst some chemists that the theoretical value could not be borne out by skilful management on the part of the farmer. He had gone into a number of very careful calculations as to the returns which might be expected from rye-grass, that being one crop which must always be used on every sewage farm, and he found that if cows were reasonably well purchased, of the right breed—large-framed Yorkshire or half-bred Short-horns—well tended and housed, and never allowed to waste their milk-producing energy; and if the milk was sold near a railway station at say 2d. per quart, which was the average price obtained by dairy farmers in the neighbourhood of all large towns, the return to the farmer for his grass consumed, after deducting interest on the cost of the cows and buildings, and allowing for everything in the most wasteful manner, would be, net, 15s. per ton. When it was remembered that 70 tons per acre had been got in one season from ten crops, the return to the farmer must be even beyond what Mr. Denton had held out. Large crops were always obtained if the grass was sown at the proper time. It should always be sown in the month of August, and lightly sewaged. One light crop would be obtained that year to pay for the cost of the sowing. There would then be another crop in the ground to come off in the spring. Last year grass-cutting began on the 24th of January. This year that was of course out of the question, but no doubt the price would be proportionately high when the cutting commenced, so that even if a farmer in a bad season got only nine or eight crops, he might realise quite as much money. With regard to mangold wurtzel and all other crops with similar appetite for manure (such as drumhead cabbages), 2,000 tons per acre of sewage—equal to forty persons—was enough to produce a maximum crop. Twenty-five to thirty tons was the ordinary yield; but with sewage 50, 60, or 70 tons might be counted upon with absolute certainty, irrespective of the season. The plant was pushed forward from the very earliest stages of growth, supposing the soil to be suitable and friable. Nothing seemed to check it; it never flagged in long periods of drought, as was the case in ordinary farming; and, above all, there were no gaps. Even if some of the seed failed, transplanting might be effected with certainty. A field of mangold produced in the ordinary way showed vacancies equal to a quarter of the whole. This was not the case with sewage, and, irrespective of this, the roots themselves were individually larger. Market-gardening was a trade which every sewage-farmer must learn. He would be almost always within easy reach of a good market for vegetables, and he could grow better vegetables than anybody else. The quality of vegetables depended upon rapidity of growth. Grown slowly, they are more generally hard and withered; if grown rapidly, they were succulent and crisp. The difference between the two kinds in sale was something extraordinary in the Borough or at Covent Garden. Last year he knew of an instance where 600 dozen of cabbages were sent up, grown by the old and the new method. They went up on the same day, when the top price for cabbages was a shilling a dozen. The 300 dozen of sewage-grown cabbages were bought up at once at 14d.; the others went off very slowly, first at 8d., then at 6d., and it took many hours to sell them. A few facts like these ought to convince everybody not only of the value of sewage, but of the necessity of combining market-gardening with farming (Hear, hear). It was the ambition of the ordinary farmer to spread his farming capital over a maximum number of acres, and perhaps in some parts of the country where rent and labour were cheap, that was right, but where the rent was

heavy and labour scarce the best policy was to concentrate capital upon a minimum number of acres. He would quadruple Mr. Denton's estimate for the above, and instead of making the sum £500 a year he would put it at £2,000 or £2,500, but at the same time he would multiply the returns at least by three. He had only further to add, that he paid £800 a year for sewage, representing 6,000 persons, or in round numbers 2s. a head, and as now it was worth 8s. per head of the result he was not afraid (cheers).

Mr. SMYTH (Herts) desired to make some observations on a plan of his own for utilizing mangold, looking at it with the view of utilizing sewage.

The CHAIRMAN suggested that Mr. Smyth's remarks would be foreign to the question under discussion.

Mr. SMYTH said he thought not. He would show that 8 tons of mangold would produce the same amount of feeding material as was to be found in a ton of barley. He took mangold pulped and kiln-dried and pressed it into a cake, and that was equal to a ton of the best barley, or equal in feeding value to a ton of oilcake. Many persons might laugh, but he was prepared to prove it analytically that it contained the same amount of feeding material.

The CHAIRMAN suggested that Mr. Smyth should confine his remarks to the question how far his process bore upon sewage.

Mr. SMYTH said he thought it was palpable that it bore upon the question if he could prove that this food was worth £10 a ton. Then came the question of the utilization of the raw mangold.

A MEMBER: The growth of the raw mangold.

Mr. SMYTH: Not the growth, but the utilization.

The CHAIRMAN: Your observations would apply equally to mangold grown in the ordinary way.

Mr. SMYTH: With all due deference the same thing may be said of the potato, but the object which you have is to show what is the best crop and what is the best way of utilizing it. (Cries of "No, no," and "Question.") Mr. Smyth finding the Club indisposed to hear him sat down.

Mr. MECHE (Tiptree Hall, Kelvedon, Essex) desired to express his thanks to Mr. Bailey Denton for his very able paper, and the great number of useful facts he had given, although he did not agree with everything he had said. He was rather an old sewage customer (laughter), it being now 27 years ago since he first wrote against the great folly and wickedness of throwing that away which would yield abundance of food for the people. He had practised it in his small way on his farm for 20 years. The manurial power of England taken by stock represented $2\frac{1}{2}$ sheep per acre; and he found that the same conclusion had been come to by the Rivers Pollution Commission; and $2\frac{1}{2}$ sheep, or $2\frac{1}{2}$ people were about the same in manurial value (laughter). It was a fact and no laughing question. If they took an Alderman's family he would give it in favour of man over sheep; but when they came to the same thing mixed with water they must estimate 50, 100, or 200 people to the acre, and if so the land in England must be very deficiently manured. The average rainfall in England was 2,600 tons per acre, and the manurial power of $2\frac{1}{2}$ sheep was mixed with 2,600 tons per acre. In towns, taking $2\frac{1}{2}$ individuals, the calculation of water was 60 tons per acre per head, making 150 instead of 2,600 tons, and yet no one grumbled. He hoped by and by they would arrive at a more reasonable calculation. He believed if they doubled the manurial power of England they would grow a great deal more of everything than they did now—at least that was his experience, and he was glad to see the result wherever the towns had begun to move in the matter. He could not give a better proof than Croydon, which had found out its error, and was about to apply only the same quantity of sewage to four times the quantity of land, and if they lived 20 years more the limitation of people to acres would go on increasing, and could they wonder at it when it took the annual average available produce of 20,000 acres of land to feed the people of London for a single day? Would any one tell him that the manure from that was not capable of greater diffusion than they had heard of yet? He agreed with Mr. Hope that if they were going to make market-gardens of the land they could hardly put too much sewage in reason upon it. They know that if an ordinary agricultural crop was consumed on the land, that land was considered sufficiently manured; and on that principle London ought to manure 20,000 acres a day; but according to

the principle now adopted London only manured a few acres. There was only one little difference between the sheep and the human being (laughter) in this matter of manure. The sheep consumed all the phosphate of lime that was contained in its food. Man in the consumption of meat did not consume the bones, and therefore in the important element of lime his manure was deficient. Baron Liebig asserted that the addition of a small quantity of superphosphate of lime would render the manure of individuals equal to that of animals that were fed on the land. He was exceedingly pleased to find the subject was now getting one of every day discussion. When he first mooted the question 27 years ago he was called a nasty fellow for hinting at it; but the subject had since been taken up in editorial articles, and he believed they would all now agree that the waste of that enormous amount of value was not only absurdly wrong with regard to the pollution of our rivers, but was wickedly wrong with respect to depriving the people of this country of a handsome profit, a large employment of labour, and a great increase of food. He recollected the time when there were no sewers in London—when they used to catch roach at Blackfriars Bridge at low water—but that time had gone by, and the river had been made a common sewer. The same thing had been done at Manchester, but now they would be compelled to do their duty. His friend the chairman, in introducing the subject, had rather charged him with twitting the farmers for not being anxious to receive liquid manure.

The CHAIRMAN: I said indifference and apathy.

Mr. MECHE said he adopted the word apathetic, and he thought it would be seen that he was right in drawing that conclusion, as he had heard it said by hundreds of farmers that they had put liquid manure on their land, but had never seen where it went, but, if so, the land could not have been drained. He believed now the time would come when the use of liquid manure would not be confined to near towns, but would be disposed over a larger area until it reached the land that had been exhausted in producing food to bring into the towns. He had used a good deal of sewage, and though he might differ with Mr. Bailey Denton as to the mode of putting it on, when it was in large quantities it would be desirable to convey it through open channels and diffuse it by means of hose pipes. He had not to spend £10 to put the land into form. When he had the jet at work he could put the hose on any part. He quite agreed that the land ought to be well drained. He had spent only £2 an acre for iron piping, and was thus enabled to dispose of a large quantity of sewage, and if it was of good quality it would pay to put it on in that way. Our growth of cereals could only be called half crops. The poverty of the land from want of manure was the great curse of the land in England.

Mr. CLARE SEWELL READ, M.P., said they were very much indebted to Mr. Bailey Denton for his paper, which was useful in consequence of its moderation. It was very much better to understate than to overstate the case. It was well known that to apply sewage at a certain period of the year, it would not produce the benefits to be expected from it. With regard to sewage farming, one point which had been hinted at he should like to refer to. Although there might be a considerably increased quantity of ground used for market gardens, he believed that for many years to come the principal produce would be Italian ryegrass, but the great drawback to growing it was the impossibility in some districts of disposing of it: therefore every sewage farm should have an apparatus for drying that article. Such an invention had been produced by Mr. Gibbs for drying corn, and was pretty successful. Hitherto all attempts at drying large quantities of grass by artificial means had failed; but he trusted that with the attention of scientific men would be more given to the subject, because until that was done they would never get the full value of their sewage produce.

Mr. THORNHILL HARRISON, C.E., said it struck him, after hearing the remarks that had been made, that the area of land required to utilize sewage upon was becoming more and more extensive. Mr. Mechi had pointed out that we wanted a more extended area, so as to bring about the condition of things existing previously to the introduction of the water-closet and sewage system. Previously to that period the night-soil of the country was collected and carried to an extended district over the country. Doubtless some of the Lincolnshire farmers could give some information as to the value of the night-soil of Man-

chester, which was carried across the island into Lincolnshire, and purchased at the rate of 3s. 6d. to 7s. per ton, giving as the maximum a return of about 2s. 7d. per head of the population. That was the sum that the farmer gave for the night-soil. Of course the farmer expected a considerable profit from using it, and the amount of agricultural produce was not at all represented by that sum. He found that at Stockholm the price given by the farmers for night-soil was 4s. 5d. per head of the population, and at the barracks at Carlshus, 2s. 4d. per head. One advantage of night-soil was that it could be distributed over a very large area. As regarded market-gardens as a system through which a maximum value of sewage might be obtained, of course there were near every town market-gardens at present, and by-and-by there might be difficulty in disposing of the sewage for that purpose. The question now was, what had been the experience of sewage farming up to the present time? Upon this point information of considerable importance was given in the report just issued by the Rivers Commission. First of all was given the total value of the crops, per head of the population, derived from sewage farming. At Edinburgh 260 acres of land returned, per head of the population, 1s. 5d. as the total value of the produce. It was fair to deduct from the total receipts something like 2s. 4d. as produce naturally to be expected from the land without any sewage irrigation, and deducting that in the case of Edinburgh, the amount of 1s. 5d. was reduced to 1s. 2d. per head. At the Lodge Farm at Barking the total value of produce per head 4s. 1d.; deducting 2s. 4d. as before, it was 1s. 9d. At Aldershot the total value 3s. 4d.—making no deduction for the crop without sewage, as the land being sand was worth nothing. At Rugby the return per head was 1s. 4d. (nearly the same as Edinburgh), but the deduction as before reduced the amount to 8d. The values respectively at Banbury were 2s. 4d. and 1s. 4d.; at Worthing 4s. 6d. and 3s. 8d.; at Bedford 10d. and 7d.; at Norwood 3s. 6d. and 3s. 1d.; at Croydon 4s. and 3s. 5d. That was the total value of the produce derived from the application of sewage, and compared to 8s. per head as the value of sewage it could not be considered satisfactory; but there was another point to be looked to, and that was the commercial result. At Rugby the net receipts, after deducting the expenses, only gave 28s. 8s., or 3d. per head of the population; and there was no allowance for the charge of interest upon £5,000, the cost of laying out the land. At Banbury the net receipts were 28s. 4s., or only 2d. per head, and there was no interest charged for £4,000 expended. At Worthing the amount was 27s. 18s., or 1s. 11d. per head of the population, and Mr. Rawlinson said it only returned an interest of 1½ per cent. At Bedford it was only 287 6s., or 1d. per head, with no allowance for interest. At Norwood it was 214s. 6s., or 9d. per head, and no allowance for interest. These facts he gathered from the Rivers Commissioners' Report; and the experience in England up to the present time was therefore not satisfactory to the farmer or to the country. We were by no means getting the maximum of benefits to the farmer; nor the benefit the whole country ought to receive. Probably the experience of market-gardening might mend the matter; but up to the present time the experience was very decidedly against sewage irrigation, as being either a beneficial application of the excrement of man, or a commercial success to the person who tried it.

Mr. EDMUNDS (Rugby) said: That after the glowing accounts they had heard, he was afraid there must be something wrong with them at Rugby. There they had no such results. Last season was an exceptional one—by this time they were cutting their first crop of grass (this year it had scarcely commenced growing), and then, though the ground was irrigated so soon as the crop was removed, they were only able to get six cuttings. Some difficulty was experienced in disposing of all the grass, and one piece was mowed for hay. This realized 247 from nine acres—three other crops were obtained, but they were inferior. He did not think sewage farming would be that very profitable occupation it had been represented. So much depended upon the nature of the land itself, its situation, &c., &c., that he was quite sure those great returns they had heard of were exceptional. No doubt enthusiasts had been the means of carrying out all our great improvements, but it required some one now and then to put the drag on to prevent others being carried too far. Now the balance sheet of their

surveyor was like another famous one. He had left out entirely a small matter of £5,000, which it took to prepare the land by levelling for the reception of the sewage, the making of roads, the erecting tanks, laying down pipes, &c., and no allowance at all was made for the sewage itself; so that instead of having a balance of £58 in their favour, there was an actual deficiency of £200; but he did not complain. The advantages gained were cheap at that cost. The land had been proved to be a thorough deodorizer. The pollution of the river was prevented, they had no complaints from their neighbours, and the sewage was no longer a nuisance injuring the health of the people. Mr. Bailey Denton had spoken of old pasture-land. At Rugby they had irrigated old turf, and the result was that it destroyed all the fine grasses, and the whole of the trefoils disappeared, and completely spoiled it for grazing. He was satisfied the system would not succeed with cereals—it might succeed for market gardens, but then they must be within reach of large populous towns, or they would not be able to dispose of the produce. Italian rye-grass had been proved to be the most valuable crop for two years, then it required to be renewed. One great drawback to the profitable use of sewage was, that they had to deal with it when they did not want it. No less than 84 acres out of 87 were taken for roads, tanks, &c. For these and other reasons he did not believe sewage farming would be generally a successful speculation. Where it would be profitable would be the exception.

The CHAIRMAN said this was the fifth time the Club had discussed the subject of town sewage. As early as 1848 Mr. Warren, of Horsley, brought it forward, and it was discussed on three other occasions by Mr. Mechi; so that, as far as the farmers of England were concerned, the Club could not be charged with being behindhand or indifferent to its importance. He had long taken a deep interest in the question, and some seven years ago he travelled half over England and Scotland to inform himself upon the subject before recommending any plan to be adopted in the borough of Bedford. He saw the necessity of separating rainfall from the sewage. This was a cardinal point where sewage had to be pumped; and he differed from Mr. Hope as to the amount of dilution. Then it must be remembered that vegetation, and not so much the earth itself, was the great deodorizer. If the rainfall was taken into the sewers, there was great difficulty in dealing with the sewage in winter when the supply was greatest, and when vegetation, being dormant, required least. As to the area required per 1,000 of the population, that depended upon circumstances, but mainly on the amount of filtration and screening which the sewage had to undergo. Last week he saw at Croydon an invention by Mr. Latham for screening sewage. A large perforated wheel placed in the sewage tank, in the course of its revolutions, threw out all the more solid matter before the sewage was put on the land; when sewage was so treated a very much smaller area was required for utilising it. When he told them that the land at Bedford had realised as much as £20 an acre, he thought it would be seen that Mr. Harrison's calculations were scarcely tenable. At Edinburgh, too, in open competition, the land had fetched as much as £28, and even £35 per acre.

Mr. HARRISON: I don't deny the immense produce from sewage application.

The CHAIRMAN said he did not base his remarks upon that; but he denied the statement of Mr. Harrison, that towns had hitherto failed to apply their sewage profitably. With respect to the soils best adapted to sewage, the towns had no choice, but must use the soil by which they were surrounded; but towns would do well to remember that the sewage should be applied eastwards of the town, where possible, as the prevalent winds being west, less effluvia, if any, would be carried to the town than if the sewage were applied on the west side. With regard to the drying machine of Mr. Gibbs, he thought its usefulness would be manifest in cases where towns had a difficulty in disposing of their rye grass. With regard to the dry earth system, it had been adopted in the middle-class schools at Bedford and at labourers' cottages he had recently built with marked success, but he did not think it could be adopted in large towns or places where carelessness existed. His experience led him to the conclusion that all sanitary arrangements in cities or towns must be as nearly self-acting as possible. He believed they had arrived at the solution of this difficult problem of town sewage. The plan adopted was not new. At Milan it had existed 500 or 600 years, at Edinburgh for

nearly 200 years; and therefore, as Solomon had said, there was nothing new under the sun.

Mr. BAILEY DENTON, in reply to the observations made, said as regarded Mr. Harrison's remarks they ought to look not so much to the past as to the future, which he hoped would be the case, as it was clearly not right to make the efforts of infancy the criterion of the future. His observations would certainly be very disheartening if they had any influence with the meeting. With regard to Mr. Hope's remarks, he believed the report of the Rivers Commission before referred to would show that an excess of dilution washed out the manurial matter through the soil, and if he (Mr. B. Denton) was right there was a mean to which they ought to direct their attention. He hoped some good would arise out of the variety of opinions that had been expressed on this point. With regard to another remark of Mr. Hope's as to quadrupling

the item of labour, the advantage of sewage irrigation was that the sewage was brought to the land and there distributed with a very great diminution of labour. With regard to Mr. Gibbs's machine, he happened to be one of the judges of it at Manchester, and he advised its application to the drying of sewage produce. As regarded the statement of Mr. Edmunds, of Rugby, that the finer grasses disappeared with sewage irrigation, it had been found at Carlisle to double the value of perennial grasses, land which was rented at £4 an acre now renting at £8 there. This was old grass land.

Mr. CROSSKILL (Beverley) proposed a vote of thanks to Mr. Bailey Denton for his paper.

Mr. CONGREVE, in seconding the vote, said his experience at Rugby was that sewage destroyed the finer grasses.

A vote of thanks to the chairman concluded the business.

THE GOVERNMENT EDUCATION BILL.

At a meeting of the East Suffolk Chamber of Agriculture at Ipswich.

Mr. H. BIDDILL moved that a general assent to the Bill be accorded, but that the attention of the House of Commons be called to certain clauses that require amendment.

Mr. T. HAWKINS seconded the motion.

Mr. C. HAWARD (Bramfield) moved as an amendment: That if compulsory national education be unavoidable, such education shall exclude the formal teaching of religion from such schools as shall be so supported, and also that such schools shall be supported from the national, as contrasted with the local, funds.

Mr. N. GARRETT seconded the amendment.

Mr. R. L. EVERETT suggested that the Government Bill contained many points on which they were all agreed, and it would be better to carry Mr. Biddell's motion and then point out in what respects the Bill could be amended.

This suggestion was adopted by Mr. Haward, the amendment withdrawn, and Mr. Biddell's resolution carried.

Mr. EVERETT then moved that the age up to which children should be required to attend school should be ten instead of twelve, and also that the distance from a school which should excuse a child should be two miles instead of one mile, as in rural parishes many more schools than were really required must be built if they were to be brought within a mile of every house.

Some conversation followed as to whether it would be in the power of a school board to excuse attendance for other reasons than those given in the Bill, and in the end Mr. Everett withdrew his resolution.

Mr. EVERETT then moved that at least half the school rate ought to be paid by owners of property, otherwise in many cases the tenant would have to pay in rate what the landlord now pays in the form of subscription. Wages, too, would be increased by the subtraction of juvenile labour from the market and that would fall on the tenant.

Mr. HAWARD said it was on that account that he moved that the cost of national schools should be thrown on national rather than local funds.

The CHAIRMAN suggested that as the question of local taxation was under consideration it would be rather premature to enter into the question of who should bear the burden of local rates. They would not object so much to an education rate as to some of the existing burdens, but as there did not seem much chance of getting existing burdens taken off, and as this was a national question, perhaps it was a matter in which more national assistance might be given.

Mr. HAWKINS thought as national education would be for the benefit of the whole community it should be maintained from the general taxation of the country. He also thought the chamber should express its opinion as to the time children should be kept at school, and moved that it should be up to ten years old instead of twelve.

This was seconded and carried. It was also resolved, on Mr. Hawkins' motion, that a child should not be excused if there was a school within two miles.

Mr. HAWARD moved as an amendment to Mr. Everett's proposition as to the incidence of rates, that national schools should be supported by national as distinct from local rates.

Mr. N. GARRETT seconded the motion, and it was carried by a large majority.

Mr. EVERETT then proposed

That school boards should be established in every district, and their proposed permissive power of enforcing the attendance of children at the schools should be made compulsory.

Col. TOMLINE, M.P., said: if he were inclined to use compulsion in any way upon the agricultural labourer he should insist on compulsory eating and drinking. He asked Mr. Everett what it was he meant practically by compulsory education—what was to be compulsion?

Mr. EVERETT said the Bill provided that the fine for not sending a child to school should not exceed 5s.

Col. TOMLINE: Suppose he does not possess 5s.?

Mr. EVERETT: The Bill makes no provision.

Mr. H. BIDDILL: There's lots of Bills that do.

Col. TOMLINE: The Bill is a sugar plum, and it does not present the alternative.

Mr. H. BIDDILL thought Col. Tomline would say that it would be far better that the *onus* of compulsion should rest on the government than on certain parishioners forming the school board.

Col. TOMLINE: Certainly.

Mr. BIDDILL said that was the idea of both Mr. Everett and himself.

The CHAIRMAN opposed the resolution on the ground that it was opposed to the principle of the Bill, which was to avoid interfering with the existing system in any way.

Mr. Henniker-Major and Col. Tomline were at this stage obliged to leave to take the 6 P.M. train to London to be present at the debate on the Education Bill, and the vice-chairman, Mr. M. Biddell, took the chair.

Mr. N. GARRETT then seconded Mr. Everett's resolution, which was carried.

Mr. EVERETT moved, "That in all schools receiving aid from local rates, the teaching of any creed, catechism, or tenet peculiar to any sect, be strictly forbidden. And that in all other schools receiving aid from Government grants, the religious teaching be either before or after the ordinary school business; provision to be made that attendance at such religious teaching be not compulsory, and that there be no disability for non-attendance."

Mr. W. BRACKETT seconded the resolution.

Rev. C. HODGSON defended the Church Catechism, and opposed the banishment of the Bible from schools.

The discussion was continued by Mr. H. Biddell, Mr. N. Garrett, Mr. Beckett, and Mr. E. Roe, but considering the lateness of the hour, Mr. Everett withdrew his motion without a division being taken.

At an adjourned meeting of the members of the West

Suffolk Chamber at Bury St. Edmund's, Mr. W. BIDDLE moved "That the Government Bill was generally worthy the approval of the Chamber."

This resolution was seconded by the Rev. G. F. TURNER.

Mr. FISH proposed an amendment, that the Chamber objected to the Government proposition of leaving to school-boards the power of determining the religious teaching to be given in schools supported by rates and parliamentary grants, as establishing or extending the irreligious principle of concurrent endowment and taxing minorities for the support of a religious teaching that they disapprove of or disbelieve.

Mr. CLOVER seconded Mr. Fish's proposition.

Mr. NUNN here proposed a resolution to the effect that the age up to which children should go to school should be reduced from 12 to 10, and under that age every inducement ought to be given to parents to send their children to school, but there should be no direct compulsion.

This was seconded by Mr. GAYFORD and carried.

Other resolutions were talked of, and eventually attention was redirected to Mr. Fish's, which Mr. Sparke believed was a covert attack upon the Established Church. Several gentlemen, including the chairman, agreed with part of Mr. Fish's resolution; and eventually he cut it in two, dropping what follows the word rates. This was, however, rejected by 10 to 4.

HOW THE AGRICULTURAL LABOURER WAS EDUCATED.

Fifty years ago I was seven years of age, and can well remember that my father's household consisted of two servant men, and six apprentices, viz., two stout lads, two small boys, and two girls. It was thought necessary in those days that persons should serve an apprenticeship to agriculture as well as to any other kind of business; but now the more enlightened part of the community think that any fool will do for a farmer or agricultural labourer, and that experience or training is quite unnecessary. The men in question never had more than six pounds a-year; they, however, lived with my father several years, and, on leaving his service, I have heard him say that out of his savings one of the men had left in his hands upwards of £13. But few apprentices on entering my father's house could read, but none of them ever left it without being able to read the Bible well, and most of them could write. All his household, except one boy and girl, went to church every Sunday morning, and previous to doing so the youngsters spent an hour in reading and teaching each other; after dinner two hours were spent in the same way, also after supper, when a circle would be formed and the Church Catechism, with numerous hymns and pieces would be repeated; small prizes would occasionally be offered for encouragement, and it was surprising that some of those *uneducated* children could repeat; one, I remember, would recite a very long chapter in the Testament without missing a word. Winter evenings, after supper, the men and stout lads would make spears for rick thatching, and the children would be employed reading, &c.

"Now I am one of the olden time and may be thought too slow,

But give to me the good old days of fifty years ago."

Agricultural labourers brought up in that way understood their work, and were not above doing it, but since the abolition of apprenticeship there has been a fearful falling off in their ability and manners; boys will not now submit to necessary restraint, but would rather work and live hard to enjoy liberty, and their parents generally encourage those feelings. During the last thirty-five years I have been a considerable employer of labour, and fearlessly assert that I have generally found those labourers who have had the least schooling the most valuable to me. These men having devoted their time and attention to their occupation have become masters of it, and, excelling, they take pleasure in it, and are contented in their station. "The cobbler should stick to his last." While these more highly-educated frequently become "book-worms," their attention being divided, they never excel, but are always "building castles in the air," anticipating that which they never realize; hence they become dissatisfied with their station, mere dregs of society, ready to do anything but that for which they were intended—work. I have had many such characters from time to time in my employment, whom I would rather pay to stay at home than mix them with other labourers, because they hinder more than they further by talking of what they read and hear. This knowledge frequently leads them to public-houses, where they "let their light shine before men," wasting their time and money, while their families are starving.

—Mr. T. OLIVER, of Penhallow, in *The Royal Cornwall Gazette*.

THE IMPROVIDENCE OF THE FARM LABOURER.—It was only yesterday that one of my men, who is the father of seven children, requested me to take the eldest, a boy barely ten, to act as scarecrow. I consented to do so, more with a view of helping the father than to serve any purpose of my own, as I

had rather be without the boy than otherwise. It will be a little help to the family income. I could not raise the parent's wages beyond those of my other men, on the ground of his having a large family. Such a course, even if I had, would have caused dissatisfaction among the rest of my hands, especially as the man is by no means a skilled workman. An intimate friend of mine has for the last two years employed two little boys—sons of one of his labourers—chiefly to work with their father when possible, solely to help the man, and the extra 5s. on Saturday night has been well appreciated. We farmers expect to pay for work according to its value, regardless whether it be done by Richard without a family or John with half a score, and I think rightly so. A man's family is his own private affair. Our labouring classes seem to think they were created chiefly for the purpose of bringing babies into the world. Argument and persuasion to the contrary are thrown away upon them. The man I have alluded to as in my employ must needs take a wife at the very ripe age of 19. Another, who has been in my service from childhood, and in whom I took a more than common interest, in spite of my entreaties, about two years ago did the same sort of thing. He is now 23, the second child has just come to light, and he promises to give a good deal of work to the registrar. I have a third, a nice lad of eighteen, and he is very sweet on a little girl, and I expect that before long the two will be made one flesh, with the usual consequences of course. I do all I can, by way of advice, to prevent this sort of thing, but they appear to consider their own feelings as the best guides, and they act accordingly. In every other class some regard is paid to the question of ways and means, and marriage is delayed until there appears a prospect of livelihood for the contracting parties, and provision for a family. Our agricultural labourers ignore these considerations altogether, and hence how can they expect to be anything but paupers? I differ with you entirely about little Woolven's death resting upon the community. If parents will persist in bringing heavy families into the world without having made the slightest provision for a rainy day, and are obliged to send their children to work at a tender age or submit to any other inconvenience, it is a consequence of their own act, and neither they nor any one else has a right to turn round and blame the community for that which is the natural result of individual folly and imprudence.—*A Farmer* in *The Daily News*.

ANOTHER AGRICULTURAL MOVEMENT.—The county papers are curiosities just now. In all parts of the country there are expressions of discontent and dissatisfaction at the public proceedings which have been carried on in the name of the tenant-farmers of England. In Suffolk, too, East Suffolk, and West Suffolk, Farmers' Clubs were formed last week, with a view to supersede the present injurious partizanship which has crept into the more local and declining institutions of that county. We are assured, too, that these Farmers' Clubs have been simultaneously formed in Suffolk, with a view to counteract in some measure, if not to smother completely, the evil consequences which are resulting from Chambers of Agriculture, in the Eastern Counties, being misguided and misled by the partizan zeal and activity of the Central Chamber and its Newspaper Company (Limited).—*The North of England Farmer*.

THE USE OF STEAM POWER IN AGRICULTURE.

In these days of educational development it may be a very pertinent question to ask how long is it since the agency of steam power was first directed to agricultural purposes? Very naturally one of the favourite arguments advanced for improving the mental condition of the labourer is the superior class of workmanship upon which he is engaged. The better the machinery the better should be the man to whom it is entrusted. Such an element, indeed, as fire is described in something like a proverb to be a good servant but a bad master, so that if we leave the ignorant dolt to deal with the consequences may be in every way unprofitable. But then the ignorance or erudition of the farmer's boy is worth distinguishing or defining. How proficient is it really requisite that he should be in "book learning," and how far might any such proficiency help him, as Falstaff says, "to labour in his vocation." Some thirty years or so since, any such points as these would have been scarcely worth replying to, for the business of Agriculture was still conducted very much as it had been. Four horses followed each other in one long halting line at plough; the wheat was sown broadcast, cut with a sickle, and thrashed with a flail. The establishment, however, of the Royal Agricultural Society quickly created a new order of things; one man made a fortune by drills, and another by engines, as a third spent a fortune in perfecting the design of the steam plough. The very stock of the farm may be now said to be fattened by machinery, for the lowing herd gets on a deal faster on clean cut chaff and pulped food than when winding o'er the lea; while the ploughman's whistle is fairly drowned in the busy hum of Fowler's eight-horse or Howard's patent. The hero of Bloomfield's Pastoral would, no doubt, be sadly out of place here, as we look rather for the smart mechanic or skilled artisan,

"Whose hair is crisp, and black, and long,
Whose face is like the tan."

But is it so? Is it within so comparatively recent a period that the farmer has only contrived to get so strong a power under his command? How long is it since, we repeat, that the aid of steam was first directed to agricultural purposes? According to the tradition of the engine which still stands just without the station at Darlington, it is, if we remember aright, some forty-three years back that George Stevenson started his iron horse on the Yorkshire tramway, and how much later shall we put it that the plodding farmer took up the idea? The first meeting of the Royal Society was held in Oxford in 1839, and by 1841 the Tuxfords of Boston had turned out a portable engine and thrashing-machine for Mr. Roslin, of Algarth. Let us say, then, that it is thirty years since the much-admiring Hodge first saw steam generated, and the corn knocked out after so comical a fashion. Strange as it may sound, it is much nearer sixty than thirty years since the labourer was called upon to educate himself up to the every-day use of such appliances. The railway engineer followed rather than set the example to the farmer: "The steam-engine was placed at Trewithin by Trevithick in 1812, and it cost £70. It is not equal to the engines now made, but it had done a great deal of work. We use it for thrashing, chaff-cutting, and bruising, but only for one purpose at a time." So writes Mr. Henry Trethewy, senior, at this time about the father of Cornish agriculturists, a position to which he has most deservedly attained. And we are told on all sides to educate the labourer to the

higher duties expected of him, mere physical force will have to give way to cultivated skill and mental power, and so on; when down in the far West the now worn-out grandseir can tell the little ones that he was educating himself in this way sixty years since, and without making much fuss about it, either. His "betters" even did not insist on sending him to school, and he was very probably feeding the engine, when he should have been studying the use of the globes.

There is something of a moral in such an incident as this, more especially in its application to the discussions going on throughout the country. How highly were the farming men educated in those times? How far was it necessary to elevate the minds of those who took charge of the engine at Trewithin, and in turn taught her to thrash the corn and cut the straw? Curiously enough, just within a week or so, Mr. Olver, of Penhallow, another well-known Cornish man, has been publishing his experiences of the last half-century, having been born in the very year that Mr. Trethewy started his steam engine. And this is one of the pictures presented to us: "Few apprentices on entering my father's house could read, but none of them ever left it without being able to read the Bible well, and most of them could write. All his household, except one boy and girl, went to church every Sunday morning, and previous to doing so the youngsters spent an hour in reading and teaching each other; after dinner two hours were spent in the same way, also after supper, when a circle would be formed and the Church Catechism, with numerous hymns and pieces would be repeated; small prizes would occasionally be offered for encouragement, and it was surprising what some of those uneducated children could repeat; one, I remember, would recite a very long chapter in the Testament without missing a word. Winter evenings, after supper, the men and stout lads would make spears for rick thatching, and the children would be employed reading." Some of Mr. Olver's neighbours, who do not give their names, and who, as we suspect, are not farmers, have been attempting to ridicule such reminiscences, but we can scarcely go with them, for these are surely suggestive and susceptible of some good purpose. A farm labourer who in the course of some years' service could put by his £13 may be not worth speaking of, although we fear there are but too many who never do as much, even in this advanced age. But Mr. Olver goes further, for he says, "Agricultural labourers brought up in that way, understood their work, and were not above doing it." And, again, "during the last thirty-five years I have generally found those labourers who have had the least schooling the most valuable;" whereas, "the more highly-educated frequently become 'book-worms,' their attention being divided, they never excel, but are always 'building castles in the air,' anticipating that which they never realize; hence they become dissatisfied with their station, mere dregs of society, ready to do anything but that for which they were intended—work. I have had many such characters from time to time in my employment, whom I would rather pay to stay at home than mix them with other labourers, because they hinder them more than they further." Is there any truth in this? Or should Mr. Olver become, as the other correspondents of some of the Cornish journals would make him, the mere laughing-stock of his fellows?

It was only the other evening that we were spending an

hour or two in company with a leading agriculturist, a member of the Council of the Royal Agricultural Society, a frequent judge of implements and stock, and a man of high standing in his own district. The experience of this gentleman was that some of the best labourers he had ever employed were the least educated; they were not only the best workmen but they were the most trustworthy. A carter or a cowman, moreover, would take three shillings a-week each for the services of his lads at an age when according to the new Bill they must have been at school. An addition of some six shillings to the father's own twelve or fourteen must be a matter of serious consideration, as it would tend further to keep the mother out of the field, and so afford those at work something of the sterling comforts of home. Turning to Cornwall, again, we find that at a meeting held only a few days since, Mr. Pollard, another agriculturist whose name is not unfamiliar to us, said, "twelve years was far too old for children to be kept at school, and, if insisted on, would result in a deal of pauperism, for if the parents were deprived of the half-crown or three shillings a week brought by children between ten years and twelve, they would have to go to the parish for assistance in the maintenance of their children." The education of the labourer must be considered *mainly* by his necessities, and there can be no possible doubt as to the mistake of the clause which would enact that a boy must go to school, and must not go to work until he has reached the age of twelve years. He would be very probably half-starved from the force of such a condition, and so set about the business of life at all points a worse instead of a better man. It is satisfactory to see that at most of the meetings held throughout the country this twelve years' limit has been very generally protested against; as we know of nothing that would threaten to be more injurious either to the employed or the employer in agriculture than that such a proviso should become law. In our improved schools a lad should learn at least to read or write by the time he is ten years of age, while if we ask for more, this can only be accomplished at some still more serious sacrifice.

THE EDUCATION QUESTION.—At a meeting of the Notts Chamber of Agriculture, Mr. Gilbert, Barnby, moved "That charging the cost of education out of the present poor rate would be partial and unequal; this Chamber is of opinion that the education of the people being a national object, public contributions should be paid out of the whole income of the country." Mr. Walker, Mattersey, seconded the resolution. Mr. Hemaley, Shelton, moved the following resolution:—"That we consider that compulsory education beyond the age of ten years will be injurious to the employers of labour, and a serious loss to the parents; it is calculated also to increase pauperism, and is detrimental to the children themselves as concerns their future usefulness." Mr. Butler, Ratcliffe, seconded the resolution. Mr. Walker thought they would be better without the last clause. Mr. Scott, Raddington, proposed as an amendment that "the time of compulsion be increased to thirteen years of age, and that it was desirable that children should be compelled to attend a certain number of days up to thirteen years." The amendment of Mr. Scott, finding no seconder, the original motions were put and carried. Mr. Godber proposed that a petition be sent to Parliament, embodying the resolutions passed, and praying for them to be considered. The motion was seconded, and carried.

LOCAL TAXATION AND THE GOVERNMENT PROPOSALS.—At a meeting of the Cambridgeshire and Isle of Ely Chamber of Agriculture, on Saturday last, under the presidency of Mr. Edw. Hicks, Mr. Oliver C. Pell made the following proposition: "That a petition be presented to Parliament praying that no further addition be made to the burdens already borne by the funds raised by local taxation for imperial purposes till further inquiry has been

made as to the incidence of taxation on real or personal property respectively." This was carried after some slight demonstration in favour of the Government movement.

MR. HENRY HALL DIXON.

The readers of the *Mark Lane Express* will learn with regret that the hand which penned those most interesting articles on the "Herds of Great Britain," written exclusively for this paper, is now still in death. The columns of this journal will no more contain the life-like sketches of character which was the peculiar feature in the writings of H. H. D. On Wednesday, the 18th of March, this talented writer died at his residence, in Kensington, and a gap has been left in the sphere in which he moved that cannot be easily filled up. He was as well known in the Sporting, as in the Agricultural world. The *Doncaster Gazette* says: "The racing interests of this town had always in him a most earnest and powerful supporter, and it is not too much to say that to the alterations which he from time to time suggested, Doncaster owes much of its present celebrity; and writing in reference to some further improvements only a short time ago, he said: 'I cluck over the meeting like an old hen, as I always did. Do get something done.'" The legal profession, to which Mr. Dixon was attached, he having been called to the Bar some fifteen years since, are indebted to him for a text-book compiled after great research, called "The Law of the Farm" (1858), which has already run through three editions. But it was in his sporting articles that he excelled: there was an ease, a piquancy, "quaint almost to oddity," as the writer in the *Field* has aptly expressed it, in all his articles. In his description of a race, we could almost fancy we saw what he described. The "Omibus," in the *Sporting Review*, has for the last ten years been from his prolific pen. And so was "Post and Paddock" (1858), "Silk and Scarlet" (1859), "Scott and Sebright" (1862), "Field and Fern" (1865), "Saddle and Sirloln" (1870); and, while the hand of death was poisoning over him, a companion volume to the latter work was being rapidly completed by him. His real sympathies could be traced in all he wrote, whether pastoral or personal: the owner and the animal were alike sketched with the pen of a master. Nor could it ever be said of him that he "set down aught in malice," as he abhorred all personalities. We knew him well and intimately. He was most upright and honourable in all his dealings with the world; and where he felt friendship extended towards him, he returned it tenfold in acts of everyday kindnesses. In the notice given of him in the *Sporting Life* it is truly said, "he was a most amiable, truthful, conscientious man, and perhaps no person connected with sports and pastimes more signally preserved the dignity of his private life. Quaint and plain in dress, he was himself one of the 'characters' he could so well have depicted; and as he strode along in his deerstalker, with his stick in hand, or hovered about the secluded portions of our racecourses, few would have imagined how thoroughly refined, reflective, and cultivated he was in all his tastes and predilections. His love for anecdote was a perfect passion with him, and he sifted the traits of his subjects so completely that he could set dead worthies before the reader's eye with marvellous fidelity. When in health, his mind was bright and his spirits especially vivacious, and he delighted in quiet satire and humorous sallies, with which he invariably set off his genial and chatty form of conversation with his friends." We again quote from the *Doncaster Gazette*: "On leaving Doncaster he became more especially identified with the *Mark Lane Express* and *Sporting Review*, and in the dedication of his last volume—'Saddle and Sirloln'—he gracefully acknowledges the substantial assistance which he had long received from Mr. George Parker Tuxford, the proprietor of these publications." We know that the proprietor to whom Mr. Dixon so generously referred feels that he has done no more than any other person similarly circumstanced should have done, and none more deeply feels the loss of one whom he always considered as his friend as well as his protégé. Truly may it be said of Henry Hall Dixon—"The Druid" as he loved to style himself—"We ne'er shall look upon his like again."

Mr. Dixon, who was in his 48th year, was educated at Rugby and Cambridge. He was subsequently, as we have said, called to the Bar, but his love of the literature of rural life prevented him following his profession.

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

The monthly meeting of the directors of this Society was held on March 2, in the Chambers, No. 3, George IV. Bridge, Edinburgh, the Marquis of Tweeddale, K.T., president, in the chair.

The minute of the joint meeting of the agricultural education examiners and of the Forestry Committee held on the 9th of February, was read, from which it appeared that it had been resolved to hold the examinations for the society's agricultural certificate and diploma this year on Wednesday and Thursday, the 30th and 31st March, candidates being required to lodge intimation on or before the 23rd.

The SECRETARY submitted two letters from Mr. Gillon of Wallhouse, convener of the society's Veterinary Committee, who is at present abroad. In the first letter Mr. Gillon mentions that when in Paris he was introduced to M. Charlier and his son, and that he spent two hours in the forge with them. He saw the shoes of a horse removed and new ones put on, and he considers there is more novelty than difficulty in the manipulation. He then started with M. Charlier, jun., to visit some of the stables of the French noblesse which were in the neighbourhood, and where the system has been in use for some years. He saw all kinds of feet, large and small, shod in this manner. There are about 6,000 omnibus horses shod in Paris thus, but besides, there are hundreds of horses belonging to those who let for hire in carriages and for saddle. In the country, the nobility and gentry who care about sporting or driving are gradually coming to see the real advantages of the system. Mr. Gillon states that he is thoroughly convinced of the superiority of this mode of shoeing, and any objections he has heard urged are very easily and simply answered and explained.

It was resolved that, instead of a public banquet, a president's dinner should be held at the head-quarters of the Society in Dumfries as was done at Aberdeen in 1868.

The SECRETARY reported that during the past month premium-books and blank forms of reports had been sent to 229 conveners and secretaries of local agricultural and other associations in receipt of the society's money premiums and medals.

Copies of the detailed agricultural returns of Great Britain, with abstract returns for the United Kingdom, presented to the society by Government, were submitted, and were ordered to be placed in the society's library, where any member might consult them.

Mr. MENZIES submitted a letter from Lord Kinnaird sending a printed report on steam cultivation, being the result of a year's work. Subjoined to the report there are carefully prepared statements of the cost of the implements, the expense of working, and the amount of work done in twelve months—spring and autumn cultivation. The secretary was instructed to thank his lordship for the report, which was remitted to the Committee on Steam Cultivation.

A letter from Mr Prowett (Kent), addressed to the president, in regard to a new plan of a steam cultivator, was referred to the same committee.

EAST LOTHIAN AGRICULTURAL SOCIETY.

SPRING SHOW OF STOCK.

The annual spring show of stock took place on the East Haugh, Haddington, on Friday, March 11th. In consequence of the animals for service in the county having been previously selected by a committee of the Society, no stallions were exhibited. The following premiums were awarded in breeding and fat stock. Judges for the bulls: Messrs. Douglas, Athelstaneford, and Taylor, Carsebridge, Alloa. For the fat and graining stock: Messrs. J. Wilson, Edinburgh, and Gaff, Haddington.

Five best steers, under three years old.—First, A. C. Balfour, of Whittinghame; five second best, J. Christie, Westmains. Commended: J. Hope, Fentonbarns.

Five best heifers, under three years old.—Premium, J. Hope.

Five best yearling cattle, the property of a member.—First, J. Hope; second, A. C. Balfour.

Best Shorthorn bull, above one and under four years of age.—First, Binnie, Seton Mains. Commended: J. Hope.

Best Shorthorn yearling bull.—First, Sir David Baird, Bart. Highly commended: Tweedie, Deuchrie. Commended: Tweedie.

The show was above an average in point of quality.

MUCK FACTORIES.

TO THE EDITOR.

SIR,—A farmer said to me the other day, after a chat about artificial manures, "Give me farm-yard muck; then I know what I am putting on the land!" I replied, "Do you? Have you travelled on the London and South Western Railway, between Waterloo and Vauxhall, and made use of your eyes? If so, you must have observed right and left certain yards, where the manufacture of muck is carried on most vigorously; or rather a compound is made up and sold to farmers, which passes for farm-yard manure, but is very different to what farmers get from their own yards. There may be virtue in spent hops, tan bark, and sundry kinds of refuse from dust bins, mixed with straw and as much coloured dirty water as it will carry; and no doubt farmers are quite satisfied they are getting a dirt cheap bargain; but it is only another illustration that the reign of happy ignorance and blind trust is almost as universal as ever."

As an old subscriber, I have felt it a duty to seek admission for this, in order, if possible, to induce thought and inquiry.

I am, sir, obediently yours,

ORIENTAL.

THE JOURNAL OF THE BATH AND WEST OF ENGLAND AND SOUTHERN COUNTIES ASSOCIATION.—The second part of the first volume of the third series has just been published; but the appearance of this only tends to confirm our impression as to the impolicy of a Society of such calibre attempting to issue two numbers during the year. The original papers, so far as we have had an opportunity of looking through the conveniently-cut pages, are confined to a treatise of some length, by Professor Brown, V. S., on Sheep Scab; and briefer articles on Cabbage as a Field Crop, by Professor Buckman; the Management of Farm Buildings, by Mr. Scott Burn; the Meteorology of the Southern Counties, by Mr. Whitley; and Observations on Channel Island Cattle, by Mr. Henry Middleton. The last-named of these contributions should command some especial attention, as we never remember such "a row"—there is no other word for it—as there was over the Channel Islands awards, at Southampton, where Mr. Middleton was one of the Judges. He himself admits that "the Judges were placed in a very awkward and unpleasant position;" an opinion in which we thoroughly agree. The rest of the part is made up by the Note Book.

THE CLIMAX!—Seventy-nine tenants of a Scotch proprietor have presented a petition to Parliament stating amongst other things, "That each of your petitioners as were not prohibited in their leases from killing rabbits, commenced to trap and otherwise kill the rabbits, whereupon the landlord applied for Interdict against them, but after a protracted, and to them expensive lawsuit, he failed to get Interdict. That your petitioners, or some of them, still endeavour to protect their crops by killing the rabbits, but that it is impossible to put them down in consequence of the proximity of the landlord's coveys, in which they are carefully protected during the breeding season. That the crops of your petitioners continue to be every year very much and in some cases altogether destroyed by game and rabbits, and the extent of the damage may be inferred from the fact that during last summer and autumn more than 6,000 rabbits were killed on less than 800 acres of arable land. That your petitioners believe that the existing game laws are highly prejudicial to the general interests of the nation, besides ruinous to tenant farmers."

THE TOTAL ABOLITION OF THE GAME LAWS.—At a special meeting of the Hexham Farmers' Club, Mr. Dodds moved that a Petition be sent to Parliament from this Club in favour of Mr. Beaumont's amendment to Mr. Martin's bill, so that hares as well as rabbits might be excluded from the game list. Mr. Jobson seconded the res-

lution. Mr. Bunting Lee moved: "That this Club, whilst regarding as unsatisfactory any legislation on the game laws short of their total abolition, afforded its hearty support to Mr. W. Martin's bill, with Mr. Beaumont's amendment, as conducive to that end;" and Mr. Catchaide seconded this. Mr. Trotter moved that the Club petition Parliament for the total repeal of the game-laws, and Mr. Pattison seconded this. Mr. Joseph Lee, having merged his resolution with that of Mr. Drydon, moved the following resolution: "That this Club cordially approve of Mr. Beaumont's amendment to Mr. Martin's Bill, that hares and rabbits shall not be deemed to be game within the meaning of the Game-laws; the tenant to kill hares and rabbits on the lands occupied by him, any agreement or covenant to the contrary notwithstanding, but that existing leases for a term of years shall not be interfered with." Mr. Drydon seconded the motion. On the voting being taken the first time the numbers were—For Mr. Trotter's amendment, 11; Mr. Jos. Lee's, 6; Mr. J. Bunting Lee's, 4; Mr. Dods' original motion, 9. On the voting being again taken, the result was that there were 18 in favour of Mr. Trotter's amendment, and 14 in favour of Mr. Dods' motion. The amendment in favour of petitioning Parliament for the total abolition of the Game Laws was consequently carried, the result being greeted with applause.

THE SITTITON SALE OF SHORT-HORNS.

On March 17, at the farm of Sittiton, Straloch, Aberdeenshire, the Messrs. Cruickshank had their annual sale of about eighty yearling Shorthorn bulls and heifers. Forty-five bulls were catalogued, but several of them having in consequence of some being a little off they were withdrawn; and, in order to make up the number, four younger bulls, which were intended for private sale, were taken into the ring. The young bulls were chiefly descended from the famous Forth, bred by Sir William Stirling-Maxwell, Bart., of Keir (which was slaughtered the other week at the ripe old age of thirteen), either directly or indirectly, and the very prolific, if less famous, bull Champion of England, still in the herd and serviceable, though now eleven years old. Several highest-priced bulls on Thursday were by Allan, bred at Sittiton, and the winner of two Highland Society prizes.

The average realised was for the season fair, but below that of former years. The heifers, though creditable, did not sell nearly so well in proportion to the bulls. The bidding was a little slow on the whole, but the sale was probably the best that has taken place in Aberdeenshire this year. The attendance of people, as it always is at Sittiton, was very large. Mr. Mitchell, St. John's Wells, Fyvie, acted as auctioneer. The following is the result of the sale:

BULLS.

Emblem, white, calved June 4, 1868.—Mr. Bruce, Southfront, Skene, 21 ga.
County Clerk, red, calved May 27, 1868.—Mr. Troup, Tullo, Meldrum, 33 ga.
Lord North, red, calved June 11, 1868.—Mr. Gordon, of Parkhill, 50 ga.
Chorister, red and white, calved June 15, 1868.—Mr. Philip Boyd, Inverurie, 31 ga.
Recorder, red, calved Nov. 16, 1868.—Mr. Watson, Blackford, Auchterless, 23 ga.
Goldsmith, red, calved June 1, 1869.—Mr. J. Colvin Kesick, Inverness, 26 ga.
The Bishop, roan, calved Nov. 13, 1868.—Mr. Johnstone, Drumwhindle, Ellon, 29 ga.
Solicitor-General, red, calved Jan. 3, 1869.—Mr. Craig, Fin-gass, Daviot, 37 ga.
John Bright, red, calved March 19, 1869.—Mr. Bruce, Broadland, Huntly, 73 ga.
Duke of Sutherland, red, calved Feb. 11, 1869.—Mr. Still, Pittsike, New Deer, 33 ga.
Lord Lennox, roan, calved Feb. 27, 1869.—Mr. Hutchison, Cairngall, Longside, 40 ga.
Lord President, roan, calved March 3, 1869.—Mr. Milne, Maines of Leithers, 41 ga.
Alliance, roan, calved March 4, 1869.—Mr. Stewart, Sand-hole, Fraserburgh, 51 ga.

Peer of the Realm, red, calved Feb. 26, 1869.—Mr. Ross, Ankerville, Nigg, Ross-shire, 67 ga.
Augustine, red, calved March 9, 1869.—Mr. Leslie, of Warthill, 35 ga.
Archbishop, roan, calved March 20, 1869.—Major Ramsay, of Barra, 56 ga.
City Arab, roan, calved April 2, 1869.—Major Gordon Duff, of Drummur, Keith, 30 ga.
Bartholomew, roan, calved April 10, 1869.—Mr. Milne, Levenshall, Westmoreland, 44 ga.
Golden Cross, roan, calved March 14, 1869.—Mr. Thomson, Drumbeck, Udney, 55 ga.
Mathematician, roan, calved March 25, 1869.—Mr. Fraser, Faidlie, Inverness, 41 ga.
Crown Royal, red, calved March 26, 1869.—Mr. Ure, Mel-gonie, Cromar, 43 ga.
Forerunner, red, calved March 16, 1869.—Mr. Manson, banker, Oldmeldrum, 51 ga.
Lord Clarendon, red, calved April 1, 1869.—Mr. M'Clymont, Ballagart, Ayrshire, 23 ga.
Brunswick, red, calved March 15, 1869.—Mr. Fullerton, Upper Took, Stonehaven, 24 ga.
Provider, red, calved March 9, 1869.—Mr. Ruxton, So. Ar-troughy, Logie Buchan, 27 ga.
Colossal, red, calved Feb. 27, 1869.—Mr. Robertson, Carna-dally, Ellon, 25 ga.
Social Science, red, calved March 16, 1869.—Mr. Russell, Kininmonth, 32 ga.
Royal Britain, roan, calved May 13, 1869.—Mr. Marr, Upper-mill, Tarves, 59 ga.
Prince of York, roan, calved April 25, 1869.—Mr. Rannie, Mill of Cullie, Udney, 25 ga.
Victorious, roan, calved April 29, 1869.—Mr. Cruickshank, Altona, Keithhall, 26 ga.
Violoncello, red, calved April 29, 1869.—Mr. Black, Lum-head, Foveran, 20 ga.
Golden Prince, red and white, calved April 29, 1869.—Mr. Mains of Waterton, Ellon, 23 ga.
Vampyre, roan, calved April 25, 1869.—Mr. Lawson, Old-mills, Elgin, 30 ga.
Saxe-Coburg, red and white, calved April 30, 1869.—Mr. Marshall, Overtown, Ards, 21 ga.
Royal Commission, red, calved May 1, 1869.—Mr. Thomson, Tillecarrie, Fintray, 24 ga.
Benledi, roan, calved April 28, 1869.—Mr. Valentine, Effleck, Alford, 20 ga.
Vineyard, white, calved May 11, 1869.—Dr. Traill, Tombeg, Monymusk, 10 ga.
Duke of Montrose, roan, calved May 21, 1869.—Mr. Snell, Bridgend, Cruden, 21 ga.

HEIFERS.

Angelina, red and white, calved Dec. 3, 1868.—Mr. Hope, Fentonbarns, East-Lothian, 28 ga.
Woodbine, red, calved Jan. 24, 1869.—Mr. Valentines, Affleck, Skene, 24 ga.
Challenge, red, calved Feb. 13, 1869.—Mr. Chalmers, Old-wharf, New Deer, 26 ga.
Anna Buckingham, red, calved March 2, 1869.—Mr. May, Haddo, Crimond, 19 ga.
Butterfly 30th, red, calved Feb. 23, 1869.—Mr. Cruickshank, Comisty, Forgue, 23 ga.
Spangle, red, calved March 26, 1869.—Mr. Davidson, Mains of Cairnbridge, 27 ga.
Aroma 4th, red, calved Jan. 27, 1869.—Mr. White, Clinterty, 31 ga.
Surprise, roan, calved Feb. 12, 1869.—Mr. Phillip, Softhillcock, Keithhall, 35 ga.
Kilmenny 10th, white, calved March 19, 1869.—Mr. Still, Pit-foskie, 16 ga.
Butterfly 29, red, calved March 3, 1869.—Mr. Thomson, Dumbreck, 21 ga.
Matchless 14th, roan, calved Feb. 6, 1869.—Sir William Forbes of Fintray, 37 ga.
Red Rose, red, calved April 15, 1869.—Mr. Philip, Boydne, 18 ga.
Golden Eye, roan, calved April 15, 1869.—Mr. Godsmen, New Deer, 30 ga.
Lily Buckingham, red, calved Feb. 11, 1869.—Mr. Hope, Fen-tonbarns, 18 ga.

Golden Rose, red, calved April 1, 1869.—Mr. Valentine, Affleck, 19 gs.
 Rosette, red, calved April 19, 1869.—Mr. Stewart, Laurence-kirk, 20 gs.
 Butterfly 28th, roan, calved April 24, 1869.—Mr. Bruce, Fornet, 11 gs.
 Eva Buckingham, roan, calved April 12, 1869.—Mr. Russell of Aden, 18 gs.
 Mysie 31st, roan, calved April 27, 1869.—Mr. Philip, Boynds, 21 gs.
 Sunshade, roan, calved April 29, 1869, Mr. James Moggie, Kinnellar, 10 gs.
 Broadhooks 10th, red and white, calved April 10, 1869.—Mr. Godaman, New Deer, 12 gs.
 Venilia, red, calved April 25, 1869.—Mr. Cruickshank, Comisty, 19 gs.
 Mysie 30th, red, calved April 27, 1869.—Mr. Mortimer, 15 gs.
 Golden Lily, roan, calved June 4, 1869, Mr. Godaman, New Deer, 15 gs.
 Garnet, red, calved June 13, 1869.—Mr. Philip, Boynds, 20 gs.

SALE OF SCOTCH SHORTHORNS.

On Thursday, March 24, Mr. Bruce and Mr. Scott, Glendronach, joined in offering for sale by public auction, at Iluntly market, their yearling Shorthorn bulls and heifers, hitherto disposed of separately. Mr. Raeburn, Banff, was auctioneer.

BULLS.

Miltiades, roan, calved 7th Jan., 1869.—Mr. Swanson, Golspie, 36 gs.
 Darius, roan, calved 23rd Jan., 1869.—Mr. John Sinclair, Ulbester, 46 gs.
 Marshal Ney, dark roan, calved 12th Feb., 1869.—Mr. Morrison, Braevail, Nairnshire, 26 gs.
 Hastings, red and white, calved 20th Feb., 1869.—Mr. Abel, Pitmeddan, 19 gs.
 Mazeppa, roan, calved 23rd Feb., 1869.—Mr. Allan, Portsoy, 19 gs.
 Great Seal II., roan, calved 24th Feb., 1869.—Mr. Watt, Garslity, Morayshire, 51 gs.
 Duke of Guise, red, with white marks, calved 24th Feb., 1869.—Captain Cameron, Petty, Aberdeenshire, 35 gs.
 Lord Clive, roan, calved 6th March, 1869.—Colonel Fraser Tytler, Aldourie, 31 gs.
 Lord o'Gowrie, roan, calved 29th May, 1869.—Mr. Gill, Tillydown, Marnoch, 26 gs.
 Massy, roan, calved 23rd May, 1869.—Mr. Grant, Pitgaveny, Elgin, 30 gs.
 Emperor (26096), red, calved 24th June, 1868.—Reserved at 70 gs.
 The Banker, red and white, calved 26th June, 1868.—Mr. Bruce, Clova, 26 gs.
 Amateur III., red, with white mark, calved 1st Jan., 1869.—Miss Macpherson Grant, Aberlour, 38 gs.
 The Bridegroom, red, with white mark, calved 8th Feb., 1869.—Mr. Scott, Norse, Caithness, 23 gs.
 The Admiral, red, with white mark, calved 14th Feb., 1869.—Mr. Longmore, Keith, 37 gs.
 The Favourite, dark roan, calved 17th Feb., 1869.—Mr. Alexander, Balncon, 46 gs.
 Duke of Edinburgh, red, calved 17th March, 1869.—Mr. Laing, Northumberland, 27 gs.
 Prince Arthur, red, calved 25th March, 1869.—Mr. Watt, Kirkton, Fyvie, 18 gs.
 Lord Ythan III., rich roan, calved 3rd April, 1869.—Mr. Joss, Cruichie, 36 gs.
 The Marquis, red, calved 18th April, 1869.—Mr. Smith, Inverkerty, 36 gs.

HEIFERS.

Venus, red and white, calved 6th May, 1869.—Mr. Bruce, Newton, Forres, 28 gs.
 Lady Scott, red, with white marks, calved 2nd June, 1868.—Mr. Watt, Crombie, 25 gs.
 Kitty, white, calved 3rd Jan., 1869.—Mr. Bruce, Burnside, 19 gs.
 Snowdrop, white, calved 17 March, 1869.—Mr. Mortimer, Dumkennan, 22 gs.

BURGHLEY PARK SALE OF SHORTHORNS.

By MR. STRAFFORD, ON THURSDAY, MARCH 17.

This sale was a renewal of the periodical auctions of the Shorthorns that have been held for many years at the Dairy Farm during the life of the late Marquis of Exeter; as Mr. Stafford in his remarks before the sale said, "it was an old feature under a new face." The stock was brought out in better condition than on former occasions, and, under Mr. Walton's management, who has of late been very successful with the Burghley animals in the show yard, it is expected the herd will assume a more leading position than it has hitherto done. About a couple of hundred partook of luncheon, and after the stock bulls, Nestor and Telemachus, had been inspected, the company adjourned to the ring, where, with occasionally keen competition, the following prices were realised:

COWS.

Bee, 12 years old.—Mr. Sturgeon, 23 gs.
 Queen Mary, 10 yrs.—Mr. Brown, 29 gs.
 Cecil, 7 yrs.—Mr. Stokes, 40 gs.
 Louisa 8th, 6 yrs.—Mr. Bayes, 30 gs.
 Faith, 5 yrs.—Mr. Whitwell, 25 gs.
 Fairy, 4 yrs.—Mr. Sturgeon, 24 gs.
 Lady Olivia, 4 yrs.—Mr. Stubbs, 19 gs.
 Fair Mattie, 3 yrs.—Mr. Paleman, 21 gs.
 Louisa 10th, 3 yrs.—Mr. Wood, 25 gs.
 Hope, 2 yrs.—Lord Berners, 17 gs.
 Chance Gwynne, 2 yrs.—Mr. Lawrence, 17 gs.
 Louisa 11th, 2 yrs.—Mr. Wood, 17 gs.
 Lady Cambridge, 1 yr.—Mr. Wood, 22 gs.
 Miss Martin and calf, 6 yrs.—Mr. Scott, 30 gs.
 Betty Martin, 1 yr.—Mr. Whincup, 13½ gs.

BULLS.

Royal Oxford (27380), 3 yrs.—Mr. Brown 40 gs.
 Grand Seneschal (26309), 2 yrs.—Sir G. Margrave, 46 gs.
 Grecian Saye (26318), 2 yrs.—Mr. Whitwell, 47 gs.
 Lord Treasurer, 13 months.—Mr. Bonser, 17 gs.
 William of Orange, 10 months.—Mr. Tindall, 32 gs.
 Ulysses, 12 months.—Mr. Bardett, 16 gs.
 Duke Robert, 11 months.—Mr. Fellowes, 42 gs.
 Osprey, 10 months.—Mr. Thurlby, 31 gs.
 Royalist, 10 months.—Mr. Sewell, 35 gs.
 Pembroke, 5 months.—Mr. Hack, 10 gs.
 Grand Vizier, 4 months.—Mr. Nidd, 14 gs.
 Lord Lieutenant, 3 months.—Mr. Sewell, 11 gs.
 Average of 15 cows and heifers... £24 13 6
 Average of 12 bulls £29 15 0

Some few of the company afterwards visited the stables, where the two thorough-bred stallions Knight of St. Patrick and Knight of the Thistle were shown. Old Pocahontas, the famous brood mare, is still alive, and in her 34th year.

SALE OF LORD HILL'S SHORTHORNS.—In consequence of Lord Hill entirely relinquishing his agricultural pursuits, sales have been held last month at the Hawkstone Farm in Shropshire, of the whole of the farming effects, including his famous Shorthorns, a herd of fifty-five bulls, cows, heifers, and calves. The sale of these took place on Tuesday last. There was a very large attendance from all parts of England of very influential men, the biddings were very spirited, and we believe the sale realised upwards of 1,500 guineas, or an average of about 30 guineas for all kinds and ages. 19 cows averaged 29 gs. each, 4 three-year-old heifers 31½ gs. each, 5 two years old 25 gs. each, 4 year-olds 34 gs. each, and 5 small calves 9 gs. each. The first bull, Prodgal, 3½ years old, brought 52 gs., 5 two years old bulls averaged 32 gs. each, and 11 young bulls (including bull calves) averaged 24 guineas each. The sale was under the conduct of Messrs. Chorton and Elphick.

THE MILBORNE ST. ANDREW FARMERS' CLUB (Dorset) has held its annual meeting, when the principal prize, for general root crops, was awarded to Mr. Rogers. Mr. Hambro, M.P. for Weymouth, attended the dinner, and spoke strongly against the proposed new regulations of the Government regarding the Yeomanry Cavalry. He did not see how it was possible that farmers could leave home in the busiest time of the year for the purposes of drill.

CALENDAR OF AGRICULTURE.

The sowing of grains must now be finished as fast as possible.

Sow oats at the rate of five bushels on an acre, with two tines of harrowings lengthwise, two tines across the furrows, and two tines or one lengthwise to finish the process. Roll light lands with a ton-weight within two weeks after sowing, to retain moisture and to strengthen the hold of the roots of the plants.

Sow barley in two or one-and-a-half bushels an acre, covered by two or three single tines of harrowing done lengthwise with a cross rolling with a ton-weight to smooth the surface for the grass seeds, which are sown by the broad-cast machine, that with a man, a horse, and a lad will sow 30 to 40 acres in a day in a more level manner than by hand, and being near to the ground the work can be done in windy weather that prevents hand-sowing—over which this machine constitutes a very large improvement. A single or double tine of the light harrows finishes the process. The lands have carried a root crop, well dunged and fallowed, and the lighter soils have been enriched by the crop of roots being consumed on the ground by sheep, the surface of the land encrusted with urinary and solid feces puddled by the narrow-pointed feet of the animals, ploughed with one furrow, sown, and rolled with the least possible delay to retain moisture and debar the entrance of drought. For one crop hay no better sowing has been found of grass seed than one bushel of rye-grass with 10lbs. of red clover to an acre; for the next year's pasture these quantities may be reduced by one-fourth part, and there may be added 4lbs. of yellow clover, 4lbs. of dog's tail grass, and 4lbs. of meadow fescue. Except for strictly permanent purposes, very few of the grass plants are useful to the farmer. The rye-grass yet holds its ground on the most incontestible grounds of preference of general utility—in growing most readily and producing the largest produce of herbage in the greatest variety of soils and climates in a level crop of culms of a medium height, like to a grain crop of a quality that is much relished by all herbivorous animals when used green or in dry provender, and in yielding a large quantity of sound and healthy seed that is conveniently gathered and manufactured. These and similar physical properties in all the articles that constitute the produce of the farm are obvious to the exterior senses, and in all cases do most completely destroy the chemical qualities that are found by investigation, and very often arise from accidental circumstances.

Sow lucerne on well-prepared ground by fallowing in deep ploughing, or by trenching, with an ample manuring of the best quality. Sow at the rate of 20lbs. on an acre, on a finely-reduced surface, and cover by harrowing and rolling. The very ligneous struction of this plant will ever prohibit the use for general purposes like to red clover, of which the succulent stems most immeasurably exceed the quality of lucerne, and the growth is readier and more easily obtained. But on a convenient plot of good land near to the homestead, with a proper management in the cultivation and manuring, lucerne will afford an early cutting of green food when much wanted on the farm, and several cuttings will follow to assist in obtaining the constant supply of green food: the most valuable of all the attachments of the farm. A plot of two to four acres of lucerne will be very useful, according to the extent of the farm.

Sow flax seeds on good lands after a root crop, fallowed

and dunged; cover by harrow and roll. This plant belongs to cottier farming, and will ever recede from before an enlightened agriculture.

Finish the preparation of grass lands in the hay meadows and pasture grounds; in top-dressing, as a manure, bush harrowings, removing by hand-picking all stones and rubbish that would impede the scythe; rolling, and securing fences and gates against trespass. The pasture fields must be well fenced and with proper gates, with water abundant and easy of access, and a shelter shed to retire from rains and excessive heats.

Sow vetches in two seedings, in the first and second weeks of the month. Allow four bushels of seed to an acre including a small portion of oats, and cover by harrowing and rolling. The sowings will form the third and last seedings of that most valuable plant, which forms the green food of the farm for three months, and with the winter vetch, where it is grown, for four months, being the earliest growth of the year except the early irrigations, which are too local to enter into a general estimation. Stubbles of good lands are suitable to vetches, where not found leys are next.

Prepare in the early month the fallow lands for the early root crops of beets, Swedish turnips, and potatoes. One earth may have been given last month, and the land must have had two at least in addition to produce the necessary pulverization of the soil by ploughings, harrowings, and rollings, and to remove all stones and weeds by hand-picking. By the middle of the month sow man-gold wurzel; open drills on the level ground, well prepared, 28 inches apart, by a deep furrow of the common plough. Spread along the hollows an ample quantity of half-rotted farm-yard dung. Split the ridglets by a bout of the common plough to reverse the earth and the dung, and on the top of the newly-made drills, plant the seeds by hand-dibble, or by machine, and roll with a light weight, to press the seeds into position and exclude drought. The seeds may be steeped for a day in moist solutions, as suds and lees, and encrusted with hot lime. This preparation may advance the early germination, but not the after-growth of the plants.

The third week of the month may be taken as the average season of planting potatoes with varied soils and under the many climates of Britain. The land being prepared as above directed, drills are opened 30 inches apart by a "bout" of the common plough, deeply and widely done, as for a spreading root crop—farm-yard dung in a half-rotted state and moist to dripping, is spread along the intervals in an ample allowance of at least twenty one-horse cart loads to an acre: the tubers, cut into pieces with two eyes in each plant, and large rather than small, in order to feed the germination till the roots gather nutriment from the soil, are placed by hand and trod by the foot over the dung at the distance of nine inches apart; the ridglets are split and the earth reversed over the dung by a bout of the common plough, and the newly made ridglets are rolled into a level by a light weight. The dibbling by hand of the sets into the dunged lands, and dropping of sets into the plough, are done in various ways; but no method so well suits the cleaning of the crop, and the fallowing of the land, as the raised ridge in which the crop grows, with intervals in which the seeds are destroyed and the land pulverized.

Lime may be very beneficially applied with a crop of potatoes—lying in a thatched heap over winter; the cinders are dissolved into powder, and spread over the

land before the drilling, or the cinders may be spread in a broken state and ploughed under with the last ploughing, or the crude limestone may be broken small as eggs, and burnt into cinders, and ploughed into the ground, where, being powdered by the dampness of the soil, the emission of caloric will produce warm and moist exhalations that will prove very beneficial in raising the temperature of the ground, to encourage vegetation. The subsequent workings of the land will promote a very minute mixing of the soil and the lime.

Early crops will now require both horse and hand-hoeing—as carrots, lucerne in rows, wheat, beans, and peas.

Paring and burning of land will now proceed vigorously; burn the turfs into a black charred mass, which will contain most carbonaceous matter. It is the best method yet known of bringing into cultivation the waste lands that contain much fibrous, inert, and ligneous matter.

Rye and watered meadows, winter barley and vetches, will be ready in the end of the month for soiling cattle in the yards, and for being consumed on the ground by ewes and lambs. Cut and place the food in racks, to be moved regularly over the mown grown. Fold the sheep nightly on the cleaned space, allowing two square yards to each animal, and two nights in one place. Bare grass lands may be much improved by folding sheep on them, and consuming the food.

The lambing season will now be closed. Swedish turnips, potatoes, beetroot, and cabbages are yet the green food of the farm, and may be easily preserved to meet the crops of the current year in the earliest herbaceous plants. For sheep use a portion of oats and bruised cake

with salt. Remove the stronger lambs to the pasture fields.

Attend to the milch cows and the suckling. Give the former an ample supply of juicy food, natural or prepared: to the latter as much as they will take. When begun to be weaned, about the end of 16 weeks, give in racks in the calf pens, young vetches, bruised cake, beans, and barley-meals boiled, and linseed jellies. Place a lump of chalk and of rock salt to be licked—the latter to quicken the action of the digestive organs, and the former to correct the crude acidities of the stomach.

The last remaining fattening bullocks will be sold during this month. Use oilcake in finishing off the animals. The most backward in condition must go to grass.

The season for curing bacon being over, all pigs on hand must be kept for summer stores, and come in for early winter fattening. The earlier fat lambs will now come in for sale.

During wet weather carry all the dung from the cattle yards to the heaps in the fields, and litter the yards afresh for the summer soiling of horses, cattle, and pigs. Feed poultry and chickens with light grains, and mashed potatoes with meals, and provide clean houses and pure water.

Prepare by ploughing, harrowing, and rolling, the fallow lands for green crops, keeping most forward the portion to be sown with Swedish turnips the next month. Plough clay lands for wheat—fallow when convenience admits.

The thrashing and disposal of grains will be ended in this month, reserving a part for summer. Straw to be thrashed as required.

CALENDAR OF GARDENING.

KITCHEN GARDEN.

Asparagus beds are now prepared, either by seed sowing in rows a foot apart, or by two years old plants. The ground cannot be too turfy or too clear of stones; and if it be manured to the extent of full half the bulk of the whole earth, so much the better. In order to procure a real good "grass" of six inches high, perfect in colour, rich in flavour, and tender in its whole length, a method has been formerly described of making a deep rich bed, which being settled in the ground, is to be divided by twelve or fifteen inches wide alleys into so many beds, about three feet wide, as the ground will admit; these are to be raised about four inches above the alleys, by earth shovelled off the latter. The surface being raked into a perfect fineness, two drills are drawn an inch and a-half or two inches deep, one foot from the edge on each side, and as much apart. The best asparagus seed is to be sown two or three inches apart along the course of the drills, and immediately firmly covered with light earths. As the plants rise they are now and then thinned out, to stand at first three inches a part, and then six inches; guano water, very weak, will promote growth and strength. Such seedlings, when thinned to one foot asunder, and properly managed, will produce plants strong and durable, as if two-year-old plants were purchased. Should that plan, however, be preferred, the fine earths ought to be raked off into the alleys four inches, level depth; the line then being stretched, the plants are to be placed by it, the root being opened, spread flat, and extending every way over which, the crowns being retained upright in the centre; the earth is to be evenly spread and pressed carefully down; a good watering from the rose finishes the operations. The

Giant or Battersea asparagus is the chief plant in use, and though the procuring of a good crop requires some trouble and attention, it is amply repaid by a bountiful supply of that highly-relished and most nutritious vegetable.

Sea-kale being prepared in the same way, are to be sown with sound seeds, by the line, "three seeds" in a small circle of six inches diameter, two inches deep, and the circles two feet a part; the rows may be single at four feet distances, or, if double, two feet asunder, to form a bed.

Peas: Sow in the first and third weeks of the month "largely," as this season produces the largest supply of fruit during summer. Seed thickly in rows a foot apart, and on light soils; tread the intervals firmly by the foot, or lay a cover of turfy or coarse earth, or of rough dung. Cover the seeds lightly with loose earth. The Scimitar and Prussian varieties are the second early crop; Veitch's perfection and Ne-plus-ultra are the new varieties, and the marrow plants may be introduced in the later sowing. Sow beans twice, of any approved variety.

Sow cabbages for main crops to yield a succession of sown crops early and late in the month. Hill's dwarf and Enfield Market are the new distinctions. Savoys sown at the same time to yield the same succession. Kale in the same way, in the dwarf, green curled, and cottager's variety. Broccoli: the winter and spring varieties, as Grange's early white and Williams' Alexandra, and Siberian hardy. Brussels sprouts in the tall imported or good local selections, and the roseberry dwarf with the largest sprouts.

Sow spinach at several times. Beet in the superb crimson and pine-apple kinds. Parsnip in the new student variety. Carrots: the French horn and scarlet.

Onions, for bulbing, the true white Spanish and the brown globe silver onions, very thickly for drawing young. All these sowings in the first days of the month.

Sow celery, Leyman's or Cole's crystal white and the hardy red variety in gently warm and leafy beds, also nasturtiums and aromatic herbs. Lettuce: the brown and white colours. Radish: Wood's early and French breakfast in the kinds in the new names. Small salading twice or thrice.

Kidney beans: sow of both kinds in warm soils and dry, or rather in boxes under glass, to be transplanted when the leaves become strong; in the latter case sow early; in the former, not before the 15th.

Potatoes: plant a full sowing early as a second crop, and a main crop in the third week. The sets should have two eyes, and rather large than small. Plant artichoke suckers, if well rooted, in prepared beds, choosing showery weather.

Transplant lettuces (but expect them to run), cabbage, cauliflower, and sea-kale, and prick out upon beds of very rich soil with decayed manure a number of celery plants to become stocky, all from the seed beds to intermediate beds.

Dress all beds with hoe and rake; earth up and stick peas, and attend to neat order.

FRUIT DEPARTMENT.

Place mulch about and over the roots of wall trees, and opening others that are barren of covering. Strawberry beds, or rows newly planted, must have liberal supplies of water if drought set in.

Cucumbers should be thinned to a regular number of shoots, and stopped at a fruit, and not at a joint beyond it. Grafting is often done successfully, but must be finished early.

FLOWER GARDEN.

Sow annuals for a summer stocks; thin out seedlings in pots; propagate the herbaceous plants by slippings or rooted off-sets. Dutch-hoe and neatly rake the quarters, remove flowering stalks by scissors. Sweep and roll lawns, and begin to mow in showery weather. Plant or renew box edgings, and clean gravel walks, rolling after rain.

Any plants under glass require air and waterings, and a shift opposition to face the heavens in warm and cold exposures by the nature of the plants.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR MARCH.

The past month has been somewhat variable, the weather having been subject to very considerable fluctuation. At one period intense cold prevailed, while the change from a low to a high temperature was at times very violent. On the whole, the mean temperature of the month has been low, and vegetation has accordingly been much checked. Plants and trees of all kinds are backward for the time of year, while wheat has made but little progress in its growth. This latter fact is not greatly to be regretted, as the more genial weather that we may now look forward to will soon alter the aspect of affairs in this respect. As a rule, the wheats appear to have been well got into the land, which was in good condition for receiving the seed, and the check produced by the great degree of cold lately experienced will not have any hurtful effects beyond temporarily delaying the growth of the plant. Notwithstanding that the frost has prevented farmers from proceeding rapidly with out-door labours, there has been no disposition shown to thresh wheat out freely for market, and sales have accordingly been made slowly. The variations that have taken place in value during the month have been mainly caused by the temporary conditions affecting the market from time to time, such as shortness of supply or the non-arrival of grain vessels off ports-of-call. These variations have not been numerous during March, and wheat leaves off at the close of the month at values not materially different to those current at the opening. The imports have continued large, and the total receipts since September last show a very considerable excess over last year. At the same time, however, the stocks of foreign wheat in granary has sensibly diminished during the month, although the quantity of produce on hand is still large. It may be remarked that the amount of fine foreign wheat in granary is comparatively small, present holdings consisting chiefly of American and Russian descriptions, of which the imports have been very heavy, while the arrivals from the North of Europe have been comparatively small.

There appears to be little reason to anticipate any material variation from present currencies. Although the visible supply of wheat available for consumption in the United Kingdom is smaller than it has been for a long time past, there is every prospect of our wants being fully met. On the complete re-opening of the navigation—which is now near at hand—shipments will be received from the Continent, while the exports from the United States will probably also be heavy. Recently, however, shipments from New York have been interrupted by an advance in ocean freights, which has more

than counterbalanced the fall in gold. Towards the end of the month, town-made flour was reduced 3s. per sack at Mark Lane; but this was an unimportant feature, as the prices quoted have long been nominal.

Spring-corn generally has ruled firm throughout the month and there has been an increased demand for feeding stuffs. The arrivals of oats have been limited, and sound corn has been wanted at very full prices. Barley, beans, and peas may be quoted 1s. dearer on the month, while a rise of fully 1s. per qr. has taken place in the value of maize. This latter article is coming into very general repute as an excellent feed for cattle, though there are some important drawbacks to its use.

The stock of roots has been greatly diminished, though the holding is still large for the time of year. Potatoes of really choice quality are scarce, owing to the pressure of sales during the early part of the season, and values now show an upward tendency. Good English Regents have been disposed of at 110s. to 120s. per ton in the Borough Market, while Scotch Rocks have been in request.

The hop market has remained positively without feature. Choice qualities of new English have ruled very scarce, and have commanded full currencies; but in inferior and foreign hops there has been scarcely anything passing, and where sales have been pressed a considerable reduction has been submitted to. The imports from America have been liberal.

The Metropolitan markets have been well supplied with hay and straw, for which the trade generally has ruled dull at depressed quotations.

The English wool market has continued very inanimate. Some demand for fine lustrous has been experienced throughout the month, but all inferior samples have been utterly neglected. The new clip is expected in the market shortly, but the quality so far is not favourably spoken of. The next series of public sales of Colonial produce is fixed to commence on April 7th, which will divert the attention of the trade in some measure from English wool.

REVIEW OF THE CATTLE TRADE DURING THE MONTH OF MARCH.

The most important feature in the cattle trade during the past week has been the consummation of the first experiment of supplementing our resources for the supply of animal food, by obtaining stock from the boundless plains of the River Plate. In November last it will be remembered that the steam ship *Ariadne*, a vessel specially built for the service, left

this country for Buenos Ayres for the purpose of introducing, on a more liberal scale, the South American beasts into this country, about 17 of which had already made their appearance. This vessel has since returned with its first consignment, consisting of 144 bullocks, 300 sheep, 6 cows, 5 calves, and 7 horses; but, we regret to say, that owing to the delays incurred, caused by the tempestuous weather encountered during the passage, the condition of the stock, on arriving at Falmouth, was not such as to justify the assertion that the laudable attempt had been crowned with success, in fact, they were adjudged to be entirely unfit for the London market. The extremely low prices offered for them afforded a just criterion of the value put upon them by competent authorities, and we understand that, notwithstanding the contractor had agreed to place any number of cattle free on board, and weighing not less than 800lbs. each, for £4 per head, the importers will have to submit to a loss.

The tone of the cattle trade has been somewhat depressed. The receipts of beasts from our own grazing districts have been on a full average scale, and have included some fine Norfolk and Scotch beasts. Amongst the foreign arrivals also, we noticed some good serviceable stock. The demand has not been active, and although really prime Scots and crosses have occasionally made 5s. 2d., the more general top quotation has not exceeded 5s. per 8lbs.

As regards sheep the receipts have been on a more liberal scale, but there has been a decided scarcity of really prime breeds. In sympathy with beasts the trade has been unsettled, and lower rates have ensued. During the earlier part of the month the best downs and half-breeds made 6s. per 8lbs., but a decline of 2d. per 8lbs. has since been accepted. In the value of inferior and foreign breeds the fall has been more marked, sales being difficult even at a reduction of 2d. to 4d. per 8lbs. The best clipped sheep have realised 5s. per 8lbs.

In the lamb trade no material change has taken place. The supplies have been moderate, and the trade has been quiet, prices ranging from 7s. 6d. to 8s. per 8lbs.

Calves, of which a moderate supply has been on sale, have been dull, and lower in value.

The show of pigs has been less extensive. The trade has been dull, and prices have favoured purchasers.

In the pastures and meadow lands the supply of grass has been very moderate, and there has been, consequently, an improved demand for feeding stuffs, without, however, in any material degree, hardening the quotations.

The total imports of foreign stock into London during the past month have been as under:

	Head.
Beasts	3,023
Sheep and Lambs ...	25,830
Calves	676
Pigs	1,240
Total	30,769

The arrivals of beasts from our own grazing districts, as well as from Scotland and Ireland, thus compare with the two previous years:

From—	March, 1868.	March, 1869.	March, 1870.
Norfolk, Suffolk, Essex, and			
Cambridgeshire ...	9,100	4,806	5,950
Other parts of England ...	2,620	2,500	2,310
Scotland	2,224	815	906
Ireland	720	474	1,670

The annexed figures show the total supplies of stock exhibited at the Metropolitan Market during the month:

	Head.
Beasts	15,112
Sheep and Lambs ...	115,855
Calves	1,029
Pigs	440
Total	132,436

COMPARISON OF SUPPLIES.

March	Beasts.	Sheep and Lambs.	Calves.	Pigs.
1869	18,950	132,910	1,165	625
1868	20,380	127,260	1,146	2,270
1867	14,460	95,600	1,100	1,900
1866	15,511	117,550	1,075	2,205
1865	22,400	86,752	1,142	3,015
1864	21,500	91,890	1,218	2,690
1863	18,653	88,560	935	2,432
1862	18,200	83,040	881	2,310
1861	18,500	85,270	700	2,410
1860	18,160	93,409	853	2,042
1859	16,810	94,775	695	2,680
1858	17,321	74,410	704	1,915

Beasts have sold at from 3s. 2d. to 5s. 2d., sheep at from 3s. to 6s., lambs 7s. 6d. to 8s., calves 3s. 10d. to 6s., and pigs 4s. 6d. to 5s. 8d. per 8lbs., to sink the offal.

COMPARISON OF PRICES.

	March, 1869.	March, 1866.
	s. d. s. d.	s. d. s. d.
Beef from	3 4 to 5 8	3 4 to 5 0
Mutton	3 4 to 6 8	3 8 to 5 4
Veal	4 8 to 6 2	4 2 to 5 4
Pork	3 8 to 5 2	3 4 to 4 2
	March, 1867.	March, 1866.
	s. d. s. d.	s. d. s. d.
Beef from	3 4 to 5 2	3 4 to 5 2
Mutton	3 10 to 6 2	3 10 to 6 2
Veal	4 6 to 5 6	4 4 to 5 6
Pork	3 8 to 4 2	3 2 to 4 4

The dead-meat markets have been tolerably well supplied with both English and foreign meat. The trade, generally, has been quiet, as follows: Beef from 3s. to 4s. 8d., mutton 3s. to 4s. 10d., lamb 6s. 8d. to 7s. 4d., veal 4s. 4d. to 5s. 4d., and pork 3s. 8d. to 5s. 8d. per 8lbs., by the carcase.

REVIEW OF THE CORN TRADE DURING THE PAST MONTH.

The month of March has evinced very extreme fluctuations of temperature commencing with unusual mildness, and closing bleak and severe. So the old adage, that it should "Come in like a lion, and go out like a lamb," has been completely ignored. In fact, it has been a strange mixture of winter and spring, in the proportions of 3 to 1, though the natural order has been reversed. No decided complaints are general respecting the young wheat, yet it is impossible that these fluctuations can be good, and we do hear there is, in some places, a great deal of misplant, with a very patchy look, but the vitality of wheat is so great, it is by no means beyond recovery should there yet be before us a really genial spring. Though we have no faith in the equinoctial theory, we have often noted that the character of the season has been set by itself. Should this then be the case, last

harvest may be the precursor of many more like it, and then the present foreign plenty would be effectually absorbed by British wants; and should Russia and America have indications of a partial failure, the news would soon rectify the present depressed rates, and enable English farmers better to profit by their toil. Let it not be forgotten that we are still about 10s. below average rates, and that foreigners are as much dissatisfied with present prices as British growers, and that the late heavy imports, mostly burdened with granary expenses, have brought sad losses to importers, who with lessened means and discouraged feelings, are not likely to keep long at a losing game. Still a pressure for cash, like that now felt at Odessa, may force off liberal shipments for a time; while in America, maize, from the failure of the crop, must take off some of the surplus wheat, not only for

the Negro's use, but for the fattening of stock. The trade here, on the whole, has rather gained than lost, say to the extent of 2s. during the month, and most of the country markets, as well as that of London, closed with an upward tendency. Even Hungary, one of the great European granaries, has lately risen 1s. to 1s. 6d. per qr., and so have some places in the interior of Germany, through doubts as to the growing corn, from its present aspect, and the severe changes which have everywhere been experienced. The following rates were recently quoted at the several places named: White wheat at Paris 49s., red 46s.; white at Bordeaux 47s.; the top price of red in Belgium have been 44s. to 45s.; the best white new Zealand at Rotterdam, 44s.; red at Hambro' (Holstein quality), 40s. per qr. Range of prices at Stettin 34s. to 38s.; the best new high mixed at Dantzic, 50s. c. f. i., deliverable at open water, the port yet being closed. Wheat at Romanshorn, Switzerland, 51s. 6d., at Porrentruy, 48s., Pesth, in Hungary, 34s. to 39s. Wheat at Cologne for March 40s., for May 41s. At Mayence 41s. to 43s., with much speculation. Best wheat at Taganrog, viz., soft Ghirka 36s., ordinary wheat at Venice 41s. to 44s. Soft wheat at Algiers 46s. 6d.; white at San Francisco, 34s. Stocks 320,000 qrs., ashore and afloat. No. 1 best red spring at New York 39s. 6d. to 41s. per 480lbs.

The crops in Australia, lately expected to be heavy, have been materially reduced by unusual heat.

The first Monday commenced on a moderate supply of English wheat, with the smallest foreign arrivals noted for some time past, consisting simply of one cargo from New York. The show of samples during the morning from Kent and Essex was limited, and factors were consequently able to obtain an advance of 1s. per qr. on the best white samples; but red and low-conditioned qualities were dull. The foreign trade was not brisk, but American red brought the same improvement, and all sorts were held for 1s. per qr. more. Cargoes afloat brought an advance of 1s., with a fair sale. The more favourable advices from London were generally followed in the country by an improvement of 1s. per qr., and some places noted an advance of 1s. to 2s. Among these were Brigg, Manchester, Barnsley, Wakefield, Sleaford, Newcastle, and Melton Mowbray. Liverpool was 4d. to 5d. higher per cental for the week—say, about 2s. per qr., and all the Saturday markets were up 1s. to 2s. per qr. Glasgow noted a rise of 1s. to 2s., and Edinburgh 1s. per qr. Dublin was firm for native samples, and 6d. per brl. dearer for foreign.

On the second Monday the English supply was about the same, and the foreign much increased, though still only moderate. Not many fresh samples were then exhibited on the Kentish and Essex stands. The general rise in the country encouraged factors at first to demand 2s. per qr. more money; but this movement was not seconded by buyers, who succeeded eventually in reducing the rate to 1s. per qr., when a fair trade was done. The same confidence was not exhibited by holders of foreign, there being but few buyers at market, and the only sorts that obtained an advance of 1s. per qr. were American spring and winter red. As regards floating cargoes, the demand was fair, but no advance could be obtained. There was less decision this week in the country markets, while the weather was wintery, which was the case at the commencement of the week. The earlier markets noted a rise of 1s. to 2s. per qr. Among these were Sheffield, Hull, Sleaford, Gainsborough, and Barnsley. Many still maintained the improvement of 1s. per qr., as Leeds, Rotherham, Spalding, Rugby, Market Harborough, Lynn, Ipswich, Stockton, Bristol, Bury St. Edmund's, Rochester, and Manchester; but Birmingham and Wakefield, with good supplies, were tending down-

wards. Liverpool reported no improvement for the week, and several places on Saturday noted a decline of 1s. to 2s. per qr. Glasgow was only dearer for Scotch and American samples, and Leith advised a rise of 1s. per qr. Foreign wheat at Dublin was rather dearer; but the higher rates checked business, and there was no improvement in native produce.

On the third Monday both English and foreign supplies were moderate. But with a very decided spring-like alteration in the weather and the subdued tone of the latest country markets, notwithstanding the show of fresh samples was small, there was no doing any business till factors were content to take fully 1s. per qr. less on the best qualities, the badly-conditioned samples being neglected. There was a very limited demand for foreign. The best Baltic qualities being scarce, were held at former rates; but Russian and American red, of which the supply chiefly consisted, lost value fully 1s. per qr., with but little passing. Cargoes afloat were not, however, depressed, and former prices were paid freely for anything fine. Dull markets were this week prevalent all through the country. Many were 1s. per qr. down, as Barnsley, Gainsborough, Ipswich, Bury St. Edmund's, Gloucester, Rugby, Rotherham, Sleaford, &c. Others were 1s. to 2s. per qr. lower, as Alford, St. Ives, Lynn, and Market Rasen; but Birmingham noted an advance of 6d. to 1s. per qr., and so did Wakefield and several of Saturday's markets. Liverpool was 2d. to 3d. per cental lower on Tuesday; but on Friday this was recovered. In Scotland the wheat trade was rather cheaper. Glasgow found a dull trade, with rates tending downward, as well as Edinburgh. No native wheat appeared at Dublin, yet foreign was in very little request, though nominally unchanged.

On the fourth Monday the supply of English wheat was short, and that from abroad moderate. The show of fresh samples during the morning was small, both on the Kentish and Essex stands. It still being frosty, and several of the last country markets coming dearer, factors on the opening of the market asked 1s. to 2s. more, but this was resisted by millers, though at the previous rates there was a better sale. In foreign the only quality positively dearer was American, 1s. per qr.

The imports into London for four weeks were 20,114 qrs. English, 32,929 qrs. foreign; against 29,265 qrs. English, 67,232 qrs. foreign for the same period last year. The imports into the kingdom for four weeks, ending 19th March, were 1,820,137 cwt. wheat, 278,491 cwt. flour; against 2,390,626 cwt. wheat, 34,476 cwt. flour for the same period last year. The averages commenced at 40s. 7d., and closed at 41s. 9d.; those of London began at 43s. 7d., and ended at 45s. 6d. The London exports, in four weeks, were 855 qrs. wheat, 98 cwt. of flour.

The country and foreign flour trade have changed but little through the month, the former having gained about 1s. per sack, while the latter being relatively dear has been unaltered in value. On the third Monday town millers reduced their top price, which had long stood at 43s. to 40s. per sack, the previous state of the wheat trade for several weeks justifying the reduction. Below this point, we think it not likely that it will go, the finer qualities of wheat, both home-grown and foreign, getting scarcer every day. Norfolks range from 28s. to 31s. for the better sorts, and Canada to 23s. per barrel. The imports into London for four weeks were 85,986 sacks country; 3,206 sacks, 24,770 barrels foreign; against 81,559 sacks English; 15,032 sacks, 8,101 barrels foreign for the same period last year.

The supply of maize having been very moderate, and the opening prices low, this grain has advanced gradually through the month to the extent of about 2s. per qr.,

the best yellow being worth 29s., and white 30s. The imports in four weeks for London were 19,620 qrs., against 24,504 qrs. in 1869.

As respects malting barley the trade has been very quiet through the month, but extra samples, when they have appeared, and that has been seldom, were always taken off at rates above quotations—say up to 42s.; but 40s. has been a very fair top price. The foreign supplies having been light and the weather sharp, there was a good demand for sweet heavy qualities, as well as the lower sorts for grinding, at from 1s. to 1s. 6d. advance on the rates of February, though very light qualities may still be had at 22s. to 23s. per qr. The imports into London for four weeks were, in British qualities 10,647 qrs., in foreign 18,800 qrs., against 10,553 qrs. British, 74,796 qrs. foreign for the same period in 1869.

The malt trade has been dull all through the month, brewers still complaining of the great falling off in the demand for the want of work among the labouring classes, but prices have ruled nominally the same.

There has been a great falling off in the supply of oats, the entire foreign arrivals for the month being less than those per week in January last; while neither from Scotland or Ireland has there been a single shipment. Prices for the month, though improved fully 1s., still show the influence of the heavy imports of last autumn. But the granaries begin to be lightened by the long absence of liberal shipments through the frost, and a better sale for even stale parcels has been experienced, fair 88lbs. Russian a re worth 19s., 40 lb. Swedes 20s., and others relatively according to weight and freshness. As the ice is clearing away from the Sound and the season is advanced, the late improvement on this side the water will encourage more shipments at open water; but unless these are very plentiful there does not seem much room for a decline. The imports into London in the four weeks were 2,940 qrs. English, 35,614 qrs. foreign; against 3,224 qrs. English, 236 qrs. Scotch, 7,022 qrs. Irish, 124,980 qrs. foreign in 1869.

The rise in maize and low barley has benefited the bean trade to the extent of 1s. to 1s. 6d. on fine hard new and good old English or foreign, though prices yet continue low—say 35s. for mazagans and ticks, and 40s. to 42s. for pigeon qualities; old Egyptian 34s. to 35s. The imports into London for four weeks were 3,827 qrs. English, 3,358 qrs. foreign, against 1,686 qrs. English 6,552 qrs. foreign in 1869.

White peas, from the coldness of the season, have also somewhat hardened in value, extra quality being worth 35s. to 36s., which not long ago were offered at 34s. in vain; those for hog feed have also been rather dearer. The imports for four weeks were entirely English—say 1,910 qrs., against 797 qrs. English 8,119 qr. foreign in 1869.

Linseed has been firm and English-made cake more in demand for the lambing season, through the want of grass.

Fine red cloverseed, either foreign or English, has arrived in very small quantities, and holders have realized an advance of 2s. per cwt.; also trefoil and white seed have been improving in value, as well as tares; but the backwardness of the spring has hitherto very much restricted the demand.

AVERAGES

FOR THE LAST SIX WEEKS:	Wheat.	Barley.	Oats.
	s. d.	s. d.	s. d.
Feb. 12, 1870.....	41 9	34 6	19 10
Feb. 19, 1870.....	40 8	34 3	19 10
Feb. 26, 1870.....	40 7	33 9	20 7
March 5, 1870.....	41 0	33 7	20 8
March 12, 1870.....	40 9	33 10	20 10
March 19, 1870.....	41 9	34 4	21 1
Aggregate of the above ...	41 1	34 0	20 6
The same week in 1869.....	47 9	46 9	27 3

COMPARATIVE AVERAGES.

Years.	Qrs.	s. d.	Qrs.	s. d.	Qrs.	s. d.
1866...	66,613	45 3	36,877	36 6	6,562	24 1
1867...	60,781	59 9	23,312	40 5	6,911	24 8
1868...	40,866	73 5	20,337	43 4	11,364	26 9
1869...	52,230	47 9	25,189	46 0	8,707	27 3
1870...	66,971	41 9	31,617	34 4	5,382	21 1

BRITISH SEEDS.

MUSTARD, per bush., brown 11s. to 13s., white 11s. to 12s.	
CLAWAY, per qr.....	52s. 6d.
CLOVERSEED, red.....	92s. 8d.
CORIANDER, per cwt.....	31s. 23s.
TARNS, winter, new, per bushel.....	7s. 8s.
TANPOIL.....	30s. 38s.
RYEGRASS, per qr.....	28s. 30s.
LINSEED, per qr., sowing 70s. to 72s., crushing 58s. 61s.	
LINSEED CAKE, per ton.....	£10 5s. to £10 15s.
RAPSEED, per qr.....	64s. 7s.
RAPSEED CAKE, per ton.....	£5 10s. to £5 15s.

FOREIGN SEEDS.

CORIANDER, per cwt.....	31s. to 32s.
CLAWAY.....	48s. 50s.
CLOVERSEED, red 52s. to 68s., white.....	74s. 90s.
HAMPSEED, small 44s. to 45s. per qr.....	44s. 48s.
TANPOIL.....	22s. 28s.
RYEGRASS, per qr.....	26s. 28s.
LINSEED, per qr., Ballico 57s. to 59s., Bombay 60s. 61s.	
LINSEED CAKE, per ton.....	£10 5s. to £10 15s.
RAPSEED, per ton.....	£5 10s. to £5 15s.

HOP MARKET.

Mid and East Kents.....	£7 0.....	£9 5.....	£12 12
Wealds.....	6 0.....	7 0.....	8 0
Sussex.....	5 18.....	6 6.....	6 13
Bavarians.....	6 6.....	7 7.....	9 0
French.....	5 0.....	5 15.....	6 10
Americans.....	4 5.....	5 5.....	6 0
Yearlings.....	1 10.....	2 10.....	3 15

POTATO MARKETS. SOUTHWARK WATERSIDE.

Yorkshire Flukes.....	90s. to 120s.
Ditto Regents.....	80s. to 110s.
Lincolnshire Regents.....	85s. to 90s.
Dunbar and East Lothian do.....	90s. to 110s.
Perth, Forfar, and Fife do.....	70s. to 90s.
Do, do, do, Rocks.....	70s. to 80s.
French and Belgian whites.....	65s. to 70s.

BOROUGH AND SPITALFIELDS.

English Shaws.....	120s. to 130s. per ton.
" Rocks.....	70s. to 78s. "
Scotch Regents.....	85s. to 100s. "
" Regents.....	70s. to 80s. "
French.....	70s. to 77s. "

PRICES OF BUTTER, CHEESE, HAMS, &c.

BUTTER, per cwt. s.	CHEESE, per cwt. s.
Dorset..... 140 to 144	Cheshire..... 63 to 64
Friesland..... 116 180	Dble. Gloucester..... 64 7
Jersey..... 108 126	Cheddar..... 60 9
FASER, per doz. 14 17	American..... 60 9
BACON, per cwt:	HAMS: York, old..... 90 10
Wiltshire, green... 72 74	Cumberland..... 80 10
Irish, f.o.b. 68 71	Irish, new..... 68 10

POULTRY, &c., MARKETS.—Turkey, cocks 6s. to 11s. hens 4s. 6d. to 5s. 6d.; ditto Irish, cocks 4s. 6d. to 5s. 6d. hens 4s. to 5s.; Geese, 4s. to 5s. 6d.; Goslings, 7s. to 10s. Ducks, 2s. 6d. to 3s.; ditto Irish, 4s. to 5s.; Ducklings, 4s. to 7s.; wild Ducks, 1s. 9d.; Surrey Fowls, 4s. to 6s.; Some ditto, 3s. to 4s.; Boston and Essex, 2s. 9d. to 3s. 3d.; Irish 1s. 4d. to 2s. 3d.; Rabbits, tame 1s. to 1s. 8d., ditto wild 6s. to 13s.; Pigeons, 6d. to 1s.; Hares, 5s. to 6s. 6d.; Wild geese 1s.; Teal, 1s.; Woodcocks, 3s.; Snipe, 1s.; Gold Plover, 1s. black ditto, 10d.; Larks, 2s. per dozen. Eggs, 8s., seconds 7s. per 120.

ENGLISH WOOL MARKET.

CURRENT PRICES OF ENGLISH WOOL.	s. d.	s. d.
FLEECES—Southdown hogs.....	per lb. 1 04 to 1 1	
Half-bred ditto.....	1 3 1	
Kent fleeces.....	1 3 1	
Southdown ewes and wethers ..	1 0 1	
Leicester ditto.....	1 24 1	

Printed by Rogerson and Tuxford, 265, Strand, London, W.



Waggoner's Bull

A large, handsome bull, the property of the Waggoner Company, of London, England.

London: Published by J. H. H. & Co., 1871.



Jenny Lind.
A Ring-fellie buckeye, the property of the Ring-fellie of Madison, N. H.

London. Published by Rogers & Tuxford, 205, Strand, 1870.



Genny Lind's
A. Briggs, Bridgely, brackney, the property of Mr. Henry, Governor of Maryland, in 1816.

London. Published by Rogerson & Tuxford 265 Strand. 1870

PLATE V.

HOGARTH THE SECOND; A PRIZE SHORTHORN BULL.

THE PROPERTY OF MR. KERSY COOPER, OF EUSTON, THETFORD.

Hogarth 2nd (24148), a roan bull, calved August 30, 1866, and bred by the Rev. W. Holt Beever, of Pencraig Court, Ross, Herefordshire, is by Royal Butterfly 17th (22774), out of Rue by Rex (16833), her dam Heart's Ease by Hogarth (18036)—Snowdrop by 4th Duke of York (10167)—Science by Sir Thomas Fairfax (5196)—Starville by Young Sea Gull (5100)—Young Clarinda by Crusader (934)—Clarinda by Sultan (1485)—Young Cherry by White Comet (1582)—by Son of Chilton (136)—by Bolingbroke (86).

Royal Butterfly 17th (22774), roan, calved October 13, 1863, the famous 200-guinea calf, at the Towneley sale, in March 1864, and bred by Col. Towneley, is by Royal Butterfly (16862), out of Vestris 3rd by Valiant (12253), her dam Venilia by Tom of Lincoln (8714)—Venus by Belerophon (3119)—Verbena by Renown (2525)—Venus by Tartar (2738)—Miss Camidge by Colton (1849)—Cornforth by Pioneer (1321)—Coy by Marshal Beresford (415)—Cordelia by Cecil (120)—Cora by Favourite (252)—Countess by Cupid (177)—Lady by Grandson of Bolingbroke (280)—Phoenix by Foljambe (263)—Favourite by R. Alcock's Bull (19)—by Smith's Bull (608)—by Jolly's Bull (337).

Rue, a white cow, calved March 2, 1861, was bred by Earl Spencer, at whose sale in 1865, when Mr. Carr officiated for the first time in the place of poor Captain Spencer, Mr. Beever purchased her, being complimented by that good judge, Mr. Drewry, on having bought the best barreled cow of the lot. Fortunately she "nicks in" well with Royal Butterfly 17th, all her produce having the same attractive character. Of her lineage it was written under the head of "Shorthorn Intelligence," in *Bell's Weekly Messenger*: "Rue is by Mr. Troutbeck's fine Gwynne bull Rex, from a cow by Colonel Towneley's Hogarth, the grand-dam by Fourth Duke of York." Her dam Heartease was a show cow in the district, and took several rosettes to Althorpe.

As a young one Hogarth 2nd followed implicitly in the steps of his sire, being a grand, rich-coated calf to begin with, then becoming somewhat slack and leggy, but furnishing again gradually but surely, until he was pronounced to be "a grand heavy-fleshed bull," and exhibited, as a two-year-old, so strongly the familiar traits of

his fashionable progenitor, as to win from the *Mark Lane Express* the complimentary designation of "the stylish Hogarth."

He has been only locally shown as yet, with the following results:

1868. Norfolk Show, Downham Market.—As a yearling, second prize of £3, Lady Pigot's Rosolio beating him.

1868. Suffolk Show, Framlingham.—First prize of £4.

1869. Essex Show, Colchester.—Bulls open to all England, prize of £20, as well as the "Town prize" £20, with cow and offspring; beating Mr. Lynn's Grand Sultan, Sorcerer, Charles Le Beau, General Hopewell, &c.

1869. Norfolk Show, Attleborough.—First prize for bulls, £10, and £10 10s. Challenge Cup.

1869. Suffolk Show, Ipswich.—Bulls not under two years, First prize of £10 and Challenge Cup £10 10s.

Hogarth 2nd was purchased by Mr. Kersey Cooper just before the Smithfield Show, in the Cattle-plague year, and went up to London with an ox for exhibition; whereupon his life became at once forfeited to the great amusement of the shrewd purchaser's many friends. It was not, however, in Mr. Cooper's nature to surrender so readily, and it came about eventually through some leger-demain process upon a farm that was both in and out of the proscribed boundary that poor Hogarth managed to make his escape. He is now in training for Oxford, where it is to be hoped that he may maintain something of his early distinction, when he comes to break a lance with such celebrities as Bolivar, &c., in competition for University honours. "I have not seen the bull since I sold him," Mr. Beever writes, "but expect to view a striking likeness of him as he is now, unless Mr. E. Corbet has, which is unlikely, lost the quick eye that enabled his pencil, some years since, to faithfully, and almost as it were by magic, as I watched him, represent on canvas the pet members of my own herd; sketches which now I find often most useful on rainy days, when with the plethoric volumes of the 'Herd Book' alongside, one gets occupied in that most delicious of day dreams, the compounding in imagination of future animals, which are, of course, to be distinguished. Heigh ho! What would this world be if it were not for Shorthorns?"

PLATE VI.

JENNY LIND; A PRIZE HACKNEY MARE.

THE PROPERTY OF MR. HENRY OVERMAN, OF WEASENHAM, NORFOLK.

Jenny Lind is no doubt Norfolk bred; but neither her breeder nor pedigree can be ascertained. She is a chesnut mare, with a white face and a white heel, standing just fifteen hands high. She has capital shoulders, quite free from lumber or loading, a good middle, great quarters, and is altogether a smart, lengthy mare, on a short leg. She has very quick grand action, and the way in which she brings her hind legs under her is something extraordinary to look on.

At the Bury St. Edmunds Meeting of the Royal Agricultural Society in 1867, Jenny Lind took the first prize of £30 in the class for mares in foal or with foal at foot, suitable for breeding hackneys, and not less than fourteen-

two or over fifteen hands high. She was then sold to go to France, but was brought back by the late Sir John Thorold, and has again found her way to Weasenhams where Mr. Overman has another or two of much the same stamp.

Jenny Lind is entered for the Norfolk Society's show at Harlestone during this month, where, with a foal at foot, she will compete for Lord Leicester's premium. Mr. Overman is a tenant of Lord Leicester's, and he himself, as his father before him, holds a prominent position amongst those eminent agriculturists who have made the farming of Norfolk so famous.

THE POTATO.

BY CUTHBERT W. JOHNSON, F.R.S.

There is hardly any cultivated field crop that has made less advance in its produce than the potato. Indeed it is doubtful if the average yield has not been for some years decreasing. Our imports from foreign countries are certainly enlarging. In the year 1854 we imported 16,446 cwts.; this had gradually increased to 1,874,228 cwts. in 1867, and to 2,041,474 cwts. in 1868. This was equal to .07 of a pound for each head of our population in 1854, and to 7.52 lbs. in 1868. And yet the acreage devoted to this crop is on the increase. In the years 1867 and 1868 there were planted:

	1867.		1868.
In England	289,611 acres	...	327,178 acres.
In Wales	45,077 "	...	47,431 "
In Ireland	1,001,781 "	...	1,034,853 "
In Scotland	157,529 "	...	166,939 "

It is true that the population of our island has long been steadily increasing; but still it is very doubtful if the rate of that enlargement equals the increase of the importation, and the extension of the acreage devoted to the cultivation of this invaluable root. It is then of great importance that we should inquire into the best means of restoring the deficient supply of home-grown potatoes. We may here again refer with advantage to the hints which Dame Nature gives us. We learn from her that the potato plant delights in fresh soils; that the yield from land long devoted to pasture, or the site of an old wood-yard, is commonly at first very good, and that the tubers are fine. But that, if a succession of crops are taken, this produce gradually diminishes. This would reasonably lead us to the conclusion that something is abstracted from the soil by the plant, which even our ordinary dressings of manure fail to restore. Now, what hints have we lately received that may lead us to extend our experimental inquiries? In the last number of the "Journal of the Royal Agricultural Society," Professor Voelcker has suggested the trial for potatoes of the salts of potash, combined however with other fertilisers. Before we consider these valuable suggestions, we may use-

fully refer to the chemical composition of the potato tubers, and hence learn the nature of the various earthy and saline matters which the plant extracts from the soil. An analysis of the potato was made at the instance of the Highland Society of Scotland by Professor Anderson (*Trans. High. Soc.*, 1863, p. 38; 1864, p. 291). He found in the tubers of two varieties:

	Regents.	Dalmahoy.
Water	75.32	75.91
Starch	12.21	12.53
Sugar, &c.	2.75	2.93
*Soluble album. compounds..	2.16	2.10
Insoluble	0.21	0.15
Fibre	5.53	5.21
Ash	0.88	0.91
	100.06	99.69
*Nitrogen	0.397	0.360

The ash was composed of per cent.

	Regents.	Dalmahoy.
Peroxide of iron	0.31	0.35
Lime	1.79	2.04
Magnesia	5.75	4.56
Potash	50.62	49.62
Chlor. of potassium	5.39	6.53
Common salt	2.07	2.93
Phosphoric acid	11.49	11.21
Sulphuric acid	7.08	6.57
Silicic acid	0.98	1.25
Carbonic acid	11.30	10.26
Charcoal	3.65	4.52
	100.33	99.89

We may here note the large proportion of potash which the ash of the tuber contains. And it is from this fact, and from the results of a variety of experiments by Professor Voelcker, that the following experiments are specially recommended by him on light soils; each plot to be one-twentieth of an acre (*Jour. Roy. Ag. Soc.*, vol. vi, N. S., p. 145):

Plot	No.	lbs.	cwt.
1 No manure.	—	—	—
2 { Min. superphosphate	28	or at the rate of	4 per acre.
Crude potash salts...	11	"	4 "
Sulphate of ammonia	11	"	2 "
3 Good rotten dung ...	1	"	20 "
4 { Min. superphosphate	28	"	4 "
Crude potash salts...	28	"	4 "
5 No manure.	—	—	—
6 { Min. superphosphate	28	"	4 "
Crude potash salts...	11	"	2 "
Nitrate of soda.....	11	"	2 "
7 Peruvian guano.....	28	"	4 "
8 { Min. superphosphate	28	"	4 "
Common salt.....	28	"	4 "
9 Good rotten dung ...	1	"	20 "
10 No manure	—	—	—

"The artificials should be first mixed with ashes, burnt clay, or dry earth, and then dug or ploughed in quite early in the spring, when the dung is put on the land and when the potatoes are planted."

Various successful experiments when the potato crop was dressed with the salts of potash lead to the conclusions which our chemical examinations appear to support. The report of the experiments, carried on under the direction of Professor Voelcker by Mr. J. R. Hetherington, at Carleton in Cumberland in 1866 (*Ibid.*, vol. iii., N.S., p. 517), well deserve to be carefully studied by the potato-grower. In these experiments the potatoes (rough whites) were planted on the 23rd of April, on a piece of light land that had formerly been a beech plantation, and had only had one previous crop, namely potatoes. The manures used and the produce per acre will be found in the subjoined table, which gives the weight of large, second, small, and diseased potatoes:

Name of Manure.	Large.	Second.	Small.	Diseased.
	tn.cwt.gr.	cwt.s. grs.	cwt.s. grs.	tn.cwt.gr.
No manure.....	1 2 1	10 1	15 3	1 1 1
Dissolved bone-ash,				
4 cwt.....	2 2 0	18 1	10 1	1 1 1
Rotten dung, 20 tons	2 11 1	16 2	12 2	1 9 2
Dissolved bone-ash,				
4 cwt., and crude				
potash salts, 4 cwt.	2 13 2	18 1	9 0	1 1 0
No manure.....	1 15 3	15 0	15 0	0 14 2
Crude potash salts,	2 10 1	13 1	15 3	0 7 2
4 cwt.....				
Common salt, 4 cwt.	2 1 8	14 1	11 3	0 4 1
Dissolved bone-ash,				
4 cwt., and com-				
mon salt, 4 cwt....	3 2 1	15 0	14 0	0 3 3
Rotten dung, 20 tons	2 19 1	19 3	3 3	0 13 0
No manure.....	1 18 3	15 3	19 2	0 3 0

It was at a meeting, a few months since, of the Western Ross Farmers' Club (*Farmer's Mag.*, vol. liv., p. 66) that, during a valuable discussion on top-dressings, Mr. Sims, a large potato-grower, remarked, after speaking of the great importance of using a mixture of manures, "Of all crops, the most marked results of top-dressing are produced on potatoes. He found last year, by actual experiment, that it increases the crops by one-fifth; and, in talking the other day to a farmer, who has been a regular grower of potatoes for years, as to the quantity he gave to his potatoes, he told me he never used less than 6 cwt. per acre of a mixture of fertilizers, and he believed it would pay to give more. He found Peruvian guano 1 cwt., potash 1 cwt., and best dissolved bones 2 cwt., to suit him best; 2½ cwt. put down when planting, and 1½ cwt. when earthing up." We may here remark that the amount of the salts of potash in the ash of the potato

appears to vary with the manure employed. Professor Anderson found in 100 parts of the ash of the tuber of the Dalmainey Potato, grown on land dressed with different fertilizers (*Trans. High. Soc.*, 1865, p. 296):

Manure employed.	Potash.
5 cwt. superphosphate of lime	52.23
25 tons of dung	42.51*
35 tons of dung	57.61

* And 7.85 chloride of potassium.

The ashes of sea weeds have long been employed in the Channel Islands; but they apply these as a manure, which they call *vrac*, to the wheat crop. In Cornwall, sea-weeds are equally valued. Now it is noticeable that the ashes of these weeds yield, according to Mr. Hodges, about eight per cent. of potash. They contain also several other saline matters. In two sea-weeds, analysed by M. Gaultier de Claubry, he found, in the *Fucus saccharinus* and in the *Fucus digitatus*, which is much used in Scotland as a manure, the following substances:

Saccharine matter	Sulphate of mag-	Hydriod. of potash
Mucilage	nesia	Silica
Vegetable albumen	Muriate of soda	Phosphate of lime
Oxalate of potash	Muriate of potash	Phosphate of mag-
Malate of potash	Muriate of magnesia	nesia
Sulphate of potash	Carbonate of potash	Oxide of iron
Sulphate of soda	Carbonate of soda	Oxalate of lime.

The use of sea-weed as a manure, in the isles of Jersey and Guernsey, has been very extensive from time immemorial. Thus, in a work upon Jersey, by the Rev. Philip Falle, published in 1694, he observes that "Nature having denied us the benefit of chalk, lime, and marl, has supplied us with what fully answers the end of them in husbandry: it is a sea-weed, but a weed more valuable to us than the choicest plant that grows in our gardens. We call it *vrac* (*varce*), in ancient records *veriscum*, and sometimes *wreecum*, and it grows on the rocks about the island. It is gathered only at certain times appointed by the magistrate and signified to the people by a public crier on a market day. There are two seasons for cutting it, the one in summer, the other about the vernal equinox. The summer *vrac*, being first well dried by the sun on the sea-shore, serves for fuel, and makes a hot glowing fire; but the ashes are a great improvement to the soil, and are equal almost to a like quantity of lime. The winter *vrac* being spread thin on the green turf, and afterwards buried in the furrows by the plough, it is incredible how with its fat unctuous substance it ameliorates the ground, imbibing itself into it, softening the clod, and keeping the root of the corn moist during the most parching heats of summer. In stormy weather the sea does often tear up from the rocks vast quantities of this weed, and casts it on the shore, where it is carefully gathered up by the glad husbandman."

As to the soils best adapted for the growth of potatoes. It was at a meeting of the members of the Borough-bridge Agricultural Association, that a considerable grower, Mr. Appleyard, of Easingwold, observed (*Farm. Mag.*, vol. lix., p. 218): "The warp of the Humber and Ouse and of the Trent is acknowledged to possess the properties most requisite for their successful cultivation, as during a series of years the quality and quantity are very little deteriorated. Other kinds of soils will grow potatoes quite as well, but they require changes oftener; a loamy soil, or, as it is sometimes called, hazel earth, is next best to warp, and has been known to produce on some occasions a larger quantity per acre; and sandy soils will yield, if well tilled and properly treated, as many as four to seven tons. A piece of old sward, broken up before the winter and ploughed deep, so as to have the sod well rotted, generally grows a very deep crop, and a very desirable one, as their cultivation has a peculiar tendency

to free the fresh lands from grubs and wireworms, with which it is generally infested. Any kind of land which can be ploughed a sufficient depth, and which is well drained, can grow a crop of potatoes occasionally to advantage. The preparation of the land generally for potatoes should be begun immediately after harvest, if it is intended to grow them after a grain crop." The warp of which these excellent potato soils are composed, was analysed by Mr. Harepath (*Journ. Roy. Ag. Soc.*, vol. xi., p. 101). He found in an imperial gallon of warp-water

	Grains.
Organic matters	16.334
Carbonate of Lime	23.813
Carbonate of Magnesia	8.547
Potash and Soda	0.199
Lime	2.111
Magnesia	6.640
Peroxide of Iron	10.419
Alumina	10.487
Perphosphate of Iron	0.315
Silicio Acid, Sand, &c.	160.605
	<hr/> 233.380

The reader will here note the presence of potash, and of variety of other saline matters, all more or less valuable for the growth of this root.

The size of the sets, and the kind of potatoes are very important considerations. The question of the comparative produce of large and small sets, has been laboriously examined by Mr. G. Maw, of Benthall, near Brosley, who not long since, in the *Gardener's Chronicle*, remarked: "My experience convinces me that from one-fourth to one-third of the natural produce of the potato crop is lost solely from insufficiently large potatoes being planted; and that by a proper selection of sets an increased crop, representing a clear profit of several tons per acre, can be obtained. On the 16th of February I planted in rows 2 feet apart, and 1 foot from set to set in the rows, sixty uncut sets of early prolific potatoes, viz.:

20 sets weighing 3 oz. each.	
20 " " 4 oz. "	
20 " " 8 oz. "	
20 sets of 3 oz. each (2½lb.) produced 21lb. 5½ oz.	
20 " 4 " (5lb.) " 29lb. 0½ oz.	
20 " 8 " (10lb.) " 35lb. 3¼ oz.	

In the case of the twenty 4-oz. sets, the extra 2½lb. over and above the weight of the twenty 2-oz. sets produced a gross gain of 7lb. 10½ oz.; and a net gain, after deducting the difference in the weight of the sets, of 5lb. 2½ oz. of potatoes on the 40 square feet of ground, or at the rate of 2 tons 5 cwt. 1 qr. 1 lb. per acre net profit. In the case of the twenty 8-oz. sets, the extra 7½lb. over and above the weight of the twenty 2-oz. sets produced a gross gain of 13lb. 14 oz., and a net gain, after deducting the extra weight of the sets, 6lb. 6 oz. of potatoes on 40 square feet of ground; or at the rate of 3 tons 1 cwt. 3 qrs. 26lb. net gain per acre over and above the extra weight of seed. It will be observed that there was a large profit on each advance in the weight of the sets, viz. on the 8-oz. sets over those of 4-oz., as well as on the 4-oz. over the 2-oz. sets. Another experiment was made with second kidneys, planted at intervals of a foot, in rows 2 feet apart, on the 31st of March, viz.:

20 sets of 1 oz. (1½lb.) producing 15lb. 9 oz.	
20 " 2 oz. (2½lb.) " 16lb. 15 oz.	
20 " 4 oz. (5 lb.) " 19lb. 15 oz.	

Although the result in this case is not so striking as that of the early prolific, each advance in the weight of the set produced more than an equivalent increase in the crop, leaving a clear profit on the extra seed. On the 31st of March I also planted four lots of fluke potatoes, in rows 2 feet apart, each lot occupying 40 square feet of ground, viz.:

90 sets, 1 foot apart, of 1 oz. each (1½lb.), producing 15lb. 9 oz.	
90 sets, 1 foot apart, of 2 oz. each (2½lb.), producing 15lb. 15 oz.	
90 sets, 1 foot apart, of 4 oz. each (5 lb.), producing 19lb. 15 oz.	
16 sets, 1 foot 3 in. apart, of 8 oz. each (8lb.) producing 30lb. 12½ oz.	

In the experiments with the second kidneys and the flukes, it will be observed that there was little or no difference in the produce of the 1-oz. and 2-oz. sets, a small profit in favour of the 2-oz. early prolific sets, and a trifling loss in the flukes; but in the advance from 2-oz. to 4-oz., and from 4-oz. to 8-oz., the result is quite consistent with the other experiments, and exhibits even a greater profit in the planting of large potatoes of 8-oz. each. The twenty 4-oz. flukes (5lb.) produced 3lb. 12 oz. of potatoes more than the twenty 2-oz. sets (2½lb.), leaving a net gain of 1½lb. of potatoes on 40 square feet of ground, or at the rate of 11 cwt. 8 qrs. 14 lb. per acre clear gain, after deducting the extra weight of seed. The sixteen 8-oz. flukes planted at intervals of 15 inches in rows, 2 feet apart, produced 30lb. 12½ oz., so that the 5½lb. extra weight of sets over those 2-oz. in weight increased the crop in the 40 square feet of ground by 15lb. 12½ oz., and after deducting the extra weight of the seed, left a clear profit of 10lb. 4½ oz., or at the rate of a trifle over 5 tons per acre gain. The 3lb. extra weight of sets in the sixteen 8-oz. sets over the twenty 4-oz. sets increased the crop on 40 square feet of ground by 12lb. ½ oz., and left a clear profit of 9lb. ½ oz., or at the rate of 4 tons 8 cwt. 0 qr. 27 lb. per acre clear gain, after deducting the extra weight of seed. This question is in no way related to that of thin seeding. The distance at which the sets should be placed is another matter. I think when small sets are planted they are not put nearly thick enough in the rows. My experiments prove that the ground is capable of bearing a much greater weight of tubers than can be generated from 2-oz. or even 4-oz. sets, planted a foot apart, and I believe that such small sets, if placed at 6-inch or 8-inch intervals, would produce nearly as much to a root as if at a wider distance, and, of course, a much greater weight per acre."

The cultivation of the early potato, so extensively carried on in Cornwall and the Channel Islands, has recently been described by Mr. C. P. Le Cornu in his prize essay (*Journ. Roy. Ag. Soc.*, vol. vi., N. S., p. 136). It was when describing its cultivation in the Island of Jersey that he remarks (and the cultivation may be profitably extended in many of our southern districts):

"The preparation of the plant intended for sets is of the utmost importance. Kidney potatoes as a rule are planted whole, and the round varieties are planted in strong sets, with eyes from the crown of the plant. The kidney varieties commonly planted are the Ashleaf, the Prolific, and the Winford, alias Early Fluke. The round varieties most esteemed are the Cherbourg 'Trois Mois,' the Dalmahoy, and the Early Regents. Potatoes intended for plant should be dug before the haulm is entirely dried up; when dug they should be allowed to harden by exposure to the air and sun, occasionally turning them. Then at the fall of the year, if they are stored away singly in layers on wooden floors it will retard too early a vegetation, which otherwise is frequently the case. By a little attention the tuber in this way is checked in its habit of early growth, and when the moment arrives for planting it can, if required, be forced; but it is not often that any forcing is required, the eyes will break out into vigorous shoots, and when they are fully developed, say about half an inch in length, the tubers may be planted, taking care to place the shoots uppermost. In this manner one month at least may be gained in bringing the potato out of the ground. The preparation of

the sets must be viewed as of primary importance, taking care always to select plants of good and of early habit; this, together with a suitable and well-manured piece of ground, forms in fact the only secret in the culture of the early potato.

"The planting commences in January, and is usually all finished by the end of the next month. The next operation is the forking-up, or loosening of the ground between the rows; this is performed when the plants are fairly out of ground, either with the prong, the crook, or with a small implement in the form of a horse-hoe, usually drawn by two men. The soil being thus well opened, if not checked by frosts, which unfortunately is sometimes the case, the plants will grow quickly, so that by the middle of April they are all hoed up. In the early sheltered places some are much more forward, while in the later ground others are less. The first lot of any importance is usually sent up to the London markets about the end of April. As time advances the business rapidly increases, so that by the end of May, or the commencement of June, in ordinary years great activity prevails in connection with this trade. There is no season throughout the year in which the farmer is so busy as during the sale of his early potatoes. A day is frequently of the greatest importance in the market value of the goods, and therefore no sooner do they approach maturity than all hands are fork in hand at the work. Many consign their produce to salesmen in London; the goods are packed in baskets or barrels, and forwarded by the steam-vessels which daily ply between this island and the English ports, and thence on by railway to their destination. Others sell to the merchants here, who also export in the same manner, but on a larger scale. These, with the rest of the community, have the advantage, by means of telegraphic communication, of knowing hourly, if necessary, the state of the London markets.

"So much said respecting the time, the mode of culture, and the sale of the potato, let us look back at the fields whence the potatoes have been dug, and see what is there being done. Another crop is being sown to follow. It may be, if on a piece of ground which was cleared off early, that a late crop of potatoes is being set; this certainly is only the exception, the rule is to have a succeeding crop of either swedes, mangolds, or turnips; we have also seen barley sown, but rarely with advantage. It will now be understood that the heavy dressing of manure used for the potato is again to be called upon to supply nourishment to the succeeding crops, and what splendid produce of roots do we often see. During our experience in these matters we have invariably noticed that some of the heaviest and best returns of roots have been in immediate succession to early potatoes.

"In our remarks on the manure employed we have mentioned guano; we would observe that this article, so valuable to the farmer, was first brought to this island from Ichaboe in 1844, when its worth was much questioned and its use very little known; it is indeed comparatively only of late years that it has been extensively employed: its effects are surprising; we have seen on the same piece of ground two plots, one dressed with good farmyard manure, the other dressed and treated precisely in the same manner, but with the addition of guano at the rate of 300lbs. per vergee, and the two planted in fluke potatoes, when a difference or more than 50 per cent. resulted in favour of the piece where guano had been applied. We have also observed that where the potatoes were allowed to remain long in the ground, the haulm on the plot where the guano had been applied continued longer to vegetate than on the other; and finally, the haulm dried up somewhat in the manner be-

fore described. In 1867 there were imported to this island 879 tons of guano, and in 1868 the quantity amounted to 496 tons. It will be seen by this how much guano is now valued, and as its particular employment is for the culture of the potato, some approximate idea can be made of the quantity used for the crop. At the same time we must guard against drawing definite conclusions hastily on this point, as we know that guano is coming greatly into favour, and is being used by many for grass land in lieu of seaweed; and in a general way, if the farmyard cannot produce a sufficient supply of manure to meet the farmer's wants, he has frequently recourse to guano to make up the deficiency.

"By reference to the returns made here last year for the information of the Board of Trade, we learn that potatoes occupied 5,129½ vergees of our land; and as the whole superficial area of the island is calculated at 64,618 vergees, it follows that nearly one-twelfth part of the island's surface was devoted to the crop. Let us next see what has been the quantity of the produce exported from the island, and endeavour to compute what is the gross amount returned to the growers of potatoes by the export of the last year, 1868.

"From the collective statements kindly placed at our disposal by the custom-house authorities, the agents of the steam-packet companies, and merchants, we find the exports to have been as follows:

"In packages, by steam-vessels to Southampton, Weymouth, and Littlehampton, 5,458½ tons.

"The first package left the island on the 19th of March. This was followed by another on the 24th, by four more on the 26th, by two on the 7th of April, by forty-three on the 21st of April, when the season may be said to have opened. On the 30th of the month the number swelled up to one hundred and forty-three packages.

"In loose cargoes by sailing vessels there were shipped for the following ports:

	Tons.
Plymouth	31
Newport	276½
Southampton	100½
London	469½
Cardiff	505
Lymington	10
Swansea	917½
Liverpool	2½
Caernarvon	6
Gloucester	32
Sereq	1
Barbadoes	80
	<hr/> 2,431½

"Thus giving a total of 7,890 tons, the value of which we deduce from statements of returns to have been as follow:

	£
Produce shipped in packages... ..	44,131
Produce shipped in loose cargoes	11,442
	<hr/>
Total... ..	55,573"

The potato-grower may derive considerable benefit from the careful study of these facts. It is a hard conclusion that, when the amount of produce of our cereal crops has for ages been on the increase, the potato crop must be an exception to the rule. When, however, we remark what abundant crops are produced year after year on certain soils, such as the Warp, we may be well led to the conclusion that the potato plant may, by more careful attention to its cultivation and by the use of a mixture of artificial fertilizers, be restored in its produce and to its former freedom from disease.

LOCAL TAXATION AND THE TENANT FARMER.

There is an effort just now being made in certain quarters to awaken the attention of the tenant-farmer to the fact that Local Taxation is, above everything else, his especial grievance. It is against this abuse that he is instructed to go in; while his support, that is to say his subscription, is very earnestly solicited towards the maintenance of such an agitation. The wider the rateable area can be extended, the more people that can be caught within the meshes of the collector's net, proportionately will the individual burdens be reduced, and precisely so much the better will it be for the occupiers of land. And something in this fashion is the argument put. This, however, as it will at once strike every one who knows anything of the business of rural life, is but a very superficial view of the case, and it may be as well to come at something a little more definite from the best available authority. It would be, then, very unfair to ignore all that Mr. Genge Andrews has already done in this direction. He has, or at least so we had imagined, been of late most indefatigable in his endeavours to see the farmer righted; as it was, we take it, in his office of the champion of the agricultural interest that he attended the other day as a visitor at the dinner of the Yeovil Board of Guardians. But once arrived here, to our no little astonishment, Mr. Genge Andrews gradually shifted his ground. As it now appears, he is in this matter of Local Taxation by no manner of means the particular champion of the agricultural interest. As he himself puts it at Yeovil—"They would recollect that the question as he had set it before them was one between the owners of real property, great and small, down to the very smallest, and the owners of income arising from personal property. That was the question at issue. Even if they could say the tenant-farmer as a tenant-farmer had no interest in it, it would not alter the justice or the injustice of the exemption of personal property from the poor-rate." And, again, he declared with still more emphasis, towards the conclusion of the proceedings, how "he wished to repeat that he advanced this question, not as one between tenants only, or between tenants particularly, but as between the owners of real property and the owners of income arising from personal property. That was the ground he had taken; and he had only taken the tenant collaterally." Very good, as this is all intelligible enough. But then if, as Mr. Andrews would seem so ready to admit, the tenant-farmer as a tenant-farmer has no particular interest in this matter, why should he be called upon to make himself so busy about it? Let us say that real and personal property should each pay its due share of the rates and taxes; and let us say further that the more who pay the less will be each man's individual share. And then, what will the tenant-farmer benefit from this?

According to the tone of the meeting the Yeovil guardians did not seem to think much could come of it. Mr. Shore "was at a loss to see, and would pointedly ask Mr. Andrews *where the tenant farmers were going to get the advantage?*" To this Mr. Andrews replied at some length, as will be gathered from the full report we give; and having done so, Mr. Marden, addressing Mr. Andrews, said, "I think you have avoided Mr. Shore's question altogether, as to what you thought the tenant-farmers would gain by this;" as Mr. Raymond confessed that "he did not think the question had been answered; he did not think they had been assured how the tenant-farmer was to be benefited by

this change of the incidence of taxation." In fact, Mr. Andrews could not answer, for he had no explanation ready; and so, as we have already intimated, he was gradually driven to allow that it was not a question in which the tenant-farmers had any particular interest.

In plain truth, attempt to disguise it as we may, rates and taxes with the farmer are all very much a matter of rent. There is nothing so susceptible, nothing so buoyant as rent. Only once free it from its burdens, and up it goes in a moment, like a balloon. When on the strength of the position he has taken Mr. Andrews was recently called before the Commons Committee he said, speaking as a landowner, that if £200 a-year in the rates were reduced "I should get £200 a-year more; that is *very clear*." A TENANT FARMER quoted this answer in our own columns last week, and of course it was brought up again at the Yeovil dinner. The first question a land-agent asks on going over a property is not so much "What is the rent?" as "What are the rates?" The one, in a word, goes far to determine the other. Nevertheless, it is only right to say that Mr. Andrews made something of a point when he spoke to the gradual increase of rates, and the effect of this on tenants who had long been in possession: "Let them take the case of a man who entered upon his occupation in 1842, when the new Poor-law came first into operation, and that he had continued in his occupation under a good landlord ever since. Now the first thing that the new Poor-law regulations ordered to be done was to make an assessment upon the rack-rent to build workhouses in every union; and since then they knew that a large number of charges had been added to the poor-rate assessment by Parliament, such as police and other rates; many charges which he need not here enumerate had been thrown upon the poor-rate. Now he should like to know whether a tenant in that position, when he was not often interfered with by his landlord as to advance of rent or otherwise, whether he had not for thirty years paid the whole of the increase of the rates without receiving any corresponding reduction in his rent. Here, no doubt, is a hardship, but it is one which requires very delicate handling, and that it would be rather dangerous to make much noise about. There is a kind of recognized understanding that a man who has been in undisturbed possession of his farm for twenty or thirty years can by the end of that time, if he have done his duty by the land, afford to submit to some rise in his rent. But should the landlord be inclined to leave the tenant alone, it may be only politic that the tenant should not trouble the landlord. Otherwise, the remedy is direct enough by a representation to the agent, showing that the rates have increased so much and that a proportionate reduction of rent should follow. Still, a tenant who is always going grumbling to his landlord is not a very welcome guest, and the relations between the two are very easily disturbed. Indeed, Mr. Andrews' illustration would look to be best met by the course to which it is said the Government is favourable, and that Captain Dashwood, amongst his brother farmers has advocated so ably: "That the half-rating be made the basis—the occupier, as in Ireland, being responsible for the rate in the first instance—the half being recouped him at the payment of his rent." Here the tenant would get some proper consideration, not on the strength of any beggar's petition, but from a properly recognised claim.

Mr. Grey, the younger, of Dilston, has, indeed, in recommending a similar principle, assumed precisely such a case to be encountered as that which Mr. Andrews has drawn: "We have a precedent for this in the payment of poor rates in Ireland and other local rates in Scotland, where the plan works successfully. In support of the justice of this proposition numberless instances could be brought forward in this county where the rates on farms during the present leases have risen considerably, very much from causes over which the ratepayers had no control—such as county rate, contributions to turnpikes, &c. I think, therefore, that landowners should partly share in the fluctuation of local rates, as they are equally interested in the prosperity and peace of the district, and in the condition of its highways."

As we stated previously, Captain Dashwood has given evidence, of course agreeing in its tone with his published paper, before the committee now sitting; while, if we are to trust a summary which we have just seen in a Norfolk paper, Mr. Sewell Read has testified as directly against the adoption of such a plan: "Halving the rates would be no *pecuniary benefit* whatever to the tenant; landlords would recoup themselves, and in order to be safe, might in future agreements add *rather more* than half the existing rates to the new rents. Yeomen, owners living in their own houses, and the clergy, would remain in exactly the same position." Of

course it is something like a truism to say that people who live in their own houses would have no rates to divide with their landlords; but surely there would be some pecuniary benefit to the tenant in obtaining half any extra charge *until* a future agreement be made, when the same principle would still continue. The chief or indeed only particular evil which, as Mr. Andrews shows it, the tenant-farmer suffers, is the increase of rates that arises incidentally as it were during a term, and by half-rating the burden would be divided between the two, instead of as at present, fixing itself upon the one class. Could all rates, like rents, be permanently settled at the outset, there would be no grievance, because men would make their bargains with their eyes open; whereas it is this sliding-scale that, on the part of the tenant, we have specially to prepare against. Let it, however, only slide the other way—let only rates come down, and rents will most assuredly go up. As Mr. Andrews said in London, if there be only £90 instead of £180 to pay for taxes, he will get £90 a year more as a landlord. But then if this, as he says, is *very clear*, it is by no means so clear what it is that the tenant-farmers are to agitate for, or to what end their subscriptions are to be applied. The thing has been for some time past in a fog, which the Somersetshire farmers, at any rate, do not come to quite see through, even after the elaborate explanation at Yeovil.

LOCAL TAXATION.

At the dinner of the Yeovil Board of Guardians, Mr. JOHN TRASK, the Chairman, said: No doubt those who lived ten years hence would see vast alterations in the administration of the poor-law. He need not enter into that. But Mr. Andrews had endeavoured to lay himself out, at a very great cost on his part, and very great labour indeed, to ameliorate the injustice of the expenses which were now borne by the agriculturist and the small householder. He (Mr. Trask) held that the small householder in towns was as hardly borne upon as any man. A man who now rented a house, say from £10 to £25 yearly rent, was assessed upon that house, though he might not have £50 in the world besides; whilst his neighbour, with £80,000 in the bank, paid nothing for all that money, and was only assessed on his real property or occupation similarly to the poor man. He said that system bore hard upon that class, and he would give them an instance in the case of a very poor man, which came under his notice in the parish of Montacute—a man about eight or ten years older than himself. Years ago this man was an independent, hard-working fellow, who would have nothing from nobody, but would work for his own bread and earn it. He married a careful wife, and he put himself into a friendly society and his wife into another. Presently he saw that 2s. a-week for house rent made a great hole in his weekly wages, and, being of a most independent spirit, he resolved that he would get himself a house. Well, he laboured on and he bought himself a cottage. Now for many years the cottages at Montacute were not rated—until the Small Tenements' Act came into operation. Then this man's house was assessed; they could not make the rate without. He came to him (Mr. Trask) in great trouble. "It is the law, Hugh," he told him. "Well, sir, but I have to pay more for my house than you do yours." "Yes," he said, "you occupy your own. If I pay for those who rent my house there is a deduction for me, but there is none for you because you occupy your own." The poor man stamped and swore, and he didn't know if he didn't pull out some of his hair. He declared that he would sell the house. That went on some time, and by and by he actually did sell his house and spend his money, and he was now a pauper! He asked them what made that man a pauper? Why, the injustice of the poor rate.

Mr. H. GEORGE ANDREWS said: They were endeavouring in every county to combine, not particularly the board itself,

but the members of every board of guardians in England and Wales, as ratepayers in one combination for endeavouring to get the poor-rate assessment based on its original principle. That every Englishman should contribute his fair proportion according to his ability to pay; that was the pure and simple object of the combination of which the speaker had the honour to be a member. Now they knew very well that originally the poor-rate assessment was nothing more nor less than voluntary charity. The whole of the charge upon the rates—or the money, he would say, that was raised for the relief of the poor—previous to the Act of Elizabeth, depended upon the voluntary contributions that could be raised for the relief of the poor. That was found to be utterly inadequate, and Parliament then passed an Act making the relief of the poor a compulsory charge upon every inhabitant of England and Wales, "according to his ability." They (the associations) therefore only sought to restore the poor-rate assessment to its original principle of everyone paying his fair charge of a public duty which was originally a voluntary one. And he thought their object was one in which every man who had anything to pay to a tax ought fairly to endeavour to combine with them. He was sure that no real honest man—he didn't care what his position might be, whether he were a money-holder or a landowner—would shirk that duty, if he could see that it was a right and general principle to charge all persons according to their ability.

Mr. MARDEN said one thing he was going to ask Mr. Andrews to explain, that he had read. How was it that Mr. Andrews proposed to transfer all the responsibility to the owner and shelve the poor tenant? The tenants were not to have a voice in those affairs; the boards of guardians would consist only of gentlemen; and they would never have a tenant farmer or a manufacturer? He could not reconcile that with what had fallen from Mr. Andrews now, because, you see, you would have many owners who would reside away—in London, perhaps, or in Scotland; and would they know a pauper in the parish? He believed the printers must have made an error; Mr. Andrews never said it, or if he said it he never meant it (A laugh).

Mr. ANDREWS said with regard to the point which occurred in his examination before the House of Commons' committee, as to owners administering the poor-rate, Mr. Marden had quite misunderstood his meaning. He must

recollect that when you were before a Parliamentary committee you had to answer shortly and briefly the questions which were asked of you; you were not allowed to go into long explanations. Now he said, he believed, that if the present system, the present incidence of the rating, was to continue, that owners, who were really the payers of the rate, ought to be compelled to collect the money and to administer the rate; but he did not mean for a moment what Mr. Marden thought he meant—viz., that the owners alone should administer the rate ("No, no"), or that owners should be even much more prominent at boards of guardians than they were at present. What he meant was, that at the present moment owners were represented at the boards of guardians in the first place by the *ex-officio* members of the board, *i.e.*, the magistrates in the division; in the next place, as owners they had a cumulative vote up to six votes, which might be exercised by proxy, in the election of elected guardians. In the event of the rate remaining as at present—and they had paid the whole rate themselves—he would give them a further power in the election of guardians. Where they were non-resident, and where there were only one or two occupiers in the parish, they should have the power of nominating as their representative at the board their tenant or representative in the parish. And that every money-owner—for he was speaking of money-owners as well as land-owners—should have the opportunity of having his full share in the election of guardians. But in the scheme which they (the associations) proposed the tenant would pay his fair share of a far lower rate than now existed; and he would be entitled to have the same share in the administration as he had now. So Mr. Marden would see it was not as words were spoken, but they were taken differently from what was intended. Everyone would find that in all matters considerable explanation was required where you had always to make a direct and short answer; otherwise, it would be misunderstood by many people. He was quite sure himself that no alteration could ever be made in the administration of the Poor-law which would exclude a representative from every parish, however small it might be. It was utterly impossible, too, the Poor-law could be administered except by a resident guardian. But he didn't care how large an influence you had from any other class at that board; for he was quite sure that, whether the law were administered as now from the union fund, or by a common fund for England and Wales, he had confidence enough in his brother farmers and representatives of parishes to believe that it would not have an atom of influence on them as to their mode of dealing with the poor or with the ratepayers. He was not one of those who believed that they were of such a degraded character that they would throw away public money because it came out of a larger area than a union. Why, he should like to ask, what private interest could any guardian have, when it was a common fund for the union, whether a pauper received 2s. 6d. or 2s. 9d. per week? The individual interest now we had a common fund for the union was so very small that he could see no difference in the principle on which the law would be administered, whether it were a common fund for England and Wales including all property, or whether it were as now with a local union-rate.

Mr. HENRY PARSONS said that there would be very great alterations before many years as to rating generally; but how and in what way that was to be done he was rather at a loss to know. He should not quite like to see the rates dispensed by Government, which would be the case ultimately if all property were taxed. No doubt there would be paid men sent down here, and we should not have the least supervision over it—he didn't think, he couldn't see, that we should. Looking back at what he had seen before, he thought we should not have the least local supervision. And, of course, strangers would not be as well fit for it as we who were living in the parishes (Hear, hear). There was no class of men that could be so well acquainted with the different cases transpiring in the parishes as the present guardians. Depend upon it, if the Government dispensed the poor-rates, we should have very little supervision. As he had said before, he felt quite satisfied that before many years—they knew that things were moving in all sorts of quarters, friend Andrews and lots of other people—we should see a great alteration.

Mr. SHORE said: This was the first opportunity he had ever had of meeting Mr. Andrews in public; and he should like to ask him one question. Mr. Andrews had oftentimes very

prominently brought forward this local taxation question before the boards of guardians and tenant farmers; but the speaker was at a loss to see—though he quite agreed with the principle enunciated—he should be glad if Mr. Andrews would elucidate this: Where the tenant farmers were going to get the advantage of it. If he would explain that satisfactorily he would fight for him through thick and thin (Hear, hear, and a laugh).

Mr. ANDREWS observed that they were all aware that it was very much easier to ask questions than to answer them. One of the great objections arising out of the including of personal property in the poor-rate was that to which Mr. Parsons had alluded connected with local administration—local control. Now he should just like to analyse, as it were, what control they had at present in the amount that they should expend for the relief of the poor, as authorised and in fact enforced by the law. In a union it was a matter of course, as he took it, that their expenditure must be limited by the demands which were made upon the board by the claimants for relief. Now they knew very well that the Poor-law Board had at the present moment the most entire and complete control of the administration of the poor relief, and that they (the guardians) were at present only the agents and the tools of the Poor-law Board (Hear, hear, "Just so"). They dared not alter the diet of their unions, they dared not alter any one thing; but the Poor-law Board could immediately come down upon them and direct them what they should do. Now he wished to know how that power was to be extended, when they knew that at present every order of the Poor-law Board must be obeyed by the guardians, even in the smallest as well as in the largest amount of administration. Where the Poor-law Board required it they had to alter their unions; where it was ordered they had to build new ones; they had to do everything they were told. Now the only control the guardians had in the amount spent by the Poor-law unions was that very small difference which they might make in out-door relief, and they all knew that every board of guardians had a sort of standard of the maximum and minimum of the amount of relief to be given to an out-door pauper. Having had their legal control reduced to that very small portion, did they suppose that any board of guardians in England or Wales was going to submit to pay three times the amount of relief they ought to pay for the sake of the control and option of giving a pauper 2s. 6d. or 2s. 9d.? If they supposed that, he should suppose that boards of guardians in England and Wales had lost their senses. Now with regard to the question just asked him, as to the benefit which the occupier would receive from the extension of the area of the poor-rate from real property to personal property, he should make this explanation: Let them take the case of a tenant who entered upon his occupation in 1842, when the new Poor-law came first into operation, and that he had continued in his occupation under a good landlord ever since. Now the first thing that the new Poor-law regulations ordered to be done was to make an assessment upon the rack-rent, to build workhouses in every union; and since then they knew that a large number of charges had been added to the poor-rate assessment by Parliament, such as police and other rates; many charges which he need not here enumerate had been thrown upon the poor-rate. Now he should like to know whether a tenant in that position, when he was not otherwise interfered with by his landlord as to advance of rent or otherwise, whether he had not for 30 years paid the whole of the increase of the rates without receiving any corresponding reduction in his rent (Hear, hear)? All of them could determine that fact for themselves.

A GUARDIAN: I have for one.

Mr. MARDEN: They have not increased ("Yes, yes").

Mr. ANDREWS: They have increased since 1842 from £8,000,000 or £7,000,000 to £11,000,000 or £12,000,000! He hoped they would put those facts in their pipes and smoke them. Questions were often asked, and often they were answered fallaciously on purpose to lead them off the scent. He believed that whatever increase might take place in the future, as well as in the past, it would ultimately fall upon the occupier, both town and country. And he believed it was to the interest of the occupier of land in the country and of houses in the town that every income in this country of any considerable amount should pay its fair share to the relief of the poor, and all the other charges which were paid out of

the poor-rate. That was his opinion, and he believed, as far as he could gather, that it would be the opinion of every board of guardians in England, if they were fairly called together, and had the question fairly placed before them. That was his answer to his friend on the right, as to how the tenant was interested. But that was not all the extent to which they were interested. Let them suppose that a tenant went and took a farm for 21 years, and it was in a very inferior state of cultivation: he was an owner of money, and he made up his mind to invest £3,000 or £4,000 for the purpose of putting the farm in a first-rate state of cultivation, with the view, of course, of reimbursing himself his capital at the end of the 21 years. Now a number of those now present were members of the assessment committees. Suppose that after two years that money had been expended on the farm, and some neighbour then said: "Your land, which was only worth 25s. an acre when you entered upon it, is now worth 40s., and I don't see why you should not be assessed accordingly." If he was brought before the assessment-committee, what was the result? They were bound by the law to assess him according to the then value of the land which he occupied. ("Just so.") Was not the tenant-farmer interested in that question? It was for them to judge; he did not wish to persuade them if they could not see it. It seemed to him that the tenant-farmer was in such a case very deeply interested, because he was assessed on his outlay of his personal property at the same rate as he was assessed on the land which was originally worth 25s. an acre. That was another instance. But he went beyond that. He had never placed this question in any other position than this: that it was a question between the owner of real property—i. e., land and houses, land and anything upon it—and the owners of money. That was the ground on which he had always placed the question, and he had only placed the tenant as interested in it deeply but collaterally, on one side, as it were, of the principal question. He could not understand why the owner of houses in this town, for instance, should be assessed at 2s. 6d. in the £ for poor-rates, and 1s. or 1s. 6d. for town-rates—(Mr. RAYMOND: 2s. 8d.)—while the owner of money escaped altogether. He couldn't see any equity in that, £100 received as rents was certainly no better than £100 received from bank-shares or interest on mortgages or any other capital whatever invested. Go into the market, and £100 from one source would not buy more potatoes than £100 from any other source. If there was one principle dearer to Englishmen than another it was that they should be equally taxed and equally bear all contributions to the State, and all matters of public duty. Now if there was one public duty particularly and specially incumbent upon every man it was the relief of the poor and the administration of our criminal jurisprudence, and they must recollect it was not only the poor but the maintenance of lunatic asylums, county gaols, administration of justice, registration, vaccination, police, and so on. He would include even highways, which must come upon us by and by. He said that every man who had an interest in money or in the public welfare of this country was as much called upon to contribute to all these objects as was the owner of a house or a field. The poor-rate had its origin in Christian charity. Did money-owners mean to say that they were not Christians, and were not called upon to contribute towards the relief of the poor as well as the owners of real property? He didn't believe that even a money-owner, when he saw the equity of that, would resist a question which they (the associations) were determined to preserve in agitating until they had received that redress to which they were entitled.

Mr. MARDEN: I think you have avoided Mr. Shore's question altogether, as to what you thought the tenant-farmers would gain by this. You told the committee that if you paid £180 on the rates of your farm, you should take care and charge the tenant for it.

Mr. ANDREWS: I thought I had answered Mr. Shore in showing how the tenant is interested. My answer has reference entirely to a continuance of the rate in its present state. The committee was not dealing with the question which I advocate of an extension of the area of the rate to all England; they were not dealing with that question at all.

Mr. MARDEN: Then they were speaking to you personally, of your own—

Mr. ANDREWS: Exactly. Well, personally, do you expect

that, if the rate were divided between owner and occupier, that the owner would pay that which he has paid before?

Mr. RAYMOND: No, I should think not.

Mr. ANDREWS: Therefore I say it is an absurd proposition to attempt to divide the rate between the owner and occupier, when I should immediately charge the occupier with that which he did not pay, and which I was obliged to pay before. But the question I advocate works totally different. It would work in this way: Reduce the rate to 6d. in the £ instead of 2s. 6d., and the tenant would be only too glad to pay 3d. and the landlord 6d. The tenant would say to the landlord, "I am charged for the capital invested in this concern; you are charged for the capital invested in the estate. Both are equally taxed. If you think my farm is too cheap, raise the rent; for I do not object to a rise in the rent while I am assessed at 3d. in the £ and you at 6d." That is quite a different question to that asked of me in the committee. You can see for yourselves that, if the rate were reduced to an average of 6d. in the £ throughout the union, all capital would be assessed; the tenant would pay 3d. in the £ on his income, and the landlord 6d., and both would be equally assessed. The rising or falling of rents does not depend entirely upon the rates (Oh! oh!) Yes, if that question arises between owner and occupier whether the landlord could raise the rent would depend upon the state of prices and the state of agriculture at the time. If things were dull the tenant would say, "I cannot pay higher rent." On the other hand, if things were going upwards, the landlord may raise his rent whatever may be the state of the rate. These things depend on competition as well.

Mr. W. RAYMOND must confess that he should like to have heard that question of Mr. Shore's answered more distinctly. He didn't think that question had been answered; he didn't think they had been assured how the tenant-farmer was to be benefited by this change of the incidence of taxation.

Mr. ANDREWS was sorry that Mr. Parsons or the gentlemen present should misunderstand that point with which he started. They would recollect that the question as he had set it before them was one between the owners of real property, great and small, down to the very smallest, and the owners of income arising from personal property. That was the question at issue. Even if they could say the tenant-farmer as a tenant-farmer had no interest in it, it would not alter the justice or the injustice of the exemption of personal property from the poor-rate. But, if their scheme were agreed to that all income should be assessed to the relief of the poor, then the landlord would pay the whole tax on his part, and put it on the tenant if there were an increase of the rate. He would have to get the increase if he could back from the tenant. At the present time, and in the time past, the tenant had got to get it back from the landlord—but had he ever done that? (No, no.) No, nor it never would be! That was the real answer to the question.

Mr. PARSONS said the question in his little experience if he had a house to let, say £20 rent, and if there were two or three applications, nearly always the first question was, "What are the rates?" (Hear, hear.) Then he said if the rent was £100 and the rates were £20, of course the applicant would take that into account; but he did not see that it affected him (the tenant) in any other way. He knew a landlord who did not wish any of his tenants to pay church-rates if they had any conscientious objection; but they who did not pay church-rates, he would pay it for them, and charge it on the rent! (Hear, hear, and laughter.)

Mr. ANDREWS replied to Mr. Parsons' objection, that a house would let for more if it were free from poor-rates. Exactly so. He would take the case of a man in this town who laid out his money in building a house. He expected to receive a certain interest for his outlay—the capital invested in the building. Now before he could receive his interest, the tax levied upon the house for poor and town rates must be paid. If the poor and town rates were a matter of 6d. in the pound, instead of 2s. 6d., the renter could either have a better house for his money, or the builder could have a larger profit on his investment; but as it is, investment in building will be kept down. Mr. Parsons had referred to what he had said about the increase of rates after they had taken their farm, and the new charges laid on it—burdens which they would have to pay in the future as they had had to pay in the past; but, leaving out all that, independent of those two

points, which were very important ones, he said that a tax of eleven or twelve per cent. upon a business in which any man embarked capital—for he took it that the owner embarking his capital in the land, and the occupier embarking his capital in its cultivation, were in effect one person engaged in one business—was a heavy tax, which could not fail to be a great discouragement if it were put on any other business (Hear, hear). One of the greatest aims of the present age had been to relieve raw material and certain classes of productions from taxes. Now he wished to know whether they (the agriculturists) had not been deprived of all advantages, and whether all the charges upon them had not at the same time been continued and increased, and whether it was possible that it could be any other than a relief to have those taxes reduced by a proper extension of the area on which they bore? (Hear, hear, and applause).

Mr. MARDEN thought Mr. Andrews had not answered exactly what they wanted. Supposing his scheme were carried out, and the tax reduced to 6d. in the £, didn't he think that would be added to the tenants in the shape of rent? As to the increase of poor and highway rates, Mr. Marden testified to that by the figures in his own case; and then proceeded to inform the meeting how his mill and premises became included within the borough, so that he had also to pay £17 extra yearly on that account. When the meeting was held at the Town Hall he was not present, but Mr. Harbin, his landlord—and there could not be a better landlord (hear, hear)—was there, and suffered Mr. Batten to draw the boundary-line of the borough so as to include his occupation. The first intimation he received of it was the visit of the borough rate collector.

When he next met the squire he told him he hadn't expected that; and the squire very good-naturedly replied, "Well, I think our agreement was that you were to pay all parochial impositions" (Laughter). And so he had paid it from that time to this. Now he did not think that his squire, if he were lowered 2s. in rates, would put it on him in the rent (hear, hear); but he believed that landlords in general would do so at once (Hear, hear, and no, no).

Mr. ANDREWS considered that Mr. Marden had advanced one of the strongest cases possible in confirmation of what he had said, that all the rates, past, present, and to come fell and would fall unquestionably upon the occupier (Hear, hear). But he wished to repeat that he advanced this question, not as one between tenants only, or between tenants particularly, but as between the owners of real property and the owners of income arising from personal property. That was the ground he had taken; and he had only taken the tenant collaterally, and Mr. Marden's instance confirmed what he had said as to the increase of rates falling upon the tenant. But if their (the association's) plan were carried out, it would fall in the first place upon the owner. The great influence of money was in the House of Commons; and, once put it upon the owner, they would take care that no new burdens on the poor-rate and no increase of the poor-rate were made if they could help it. Therefore, although not primarily interested, the tenants were very deeply collaterally interested as well as the owners.

Mr. ANDREWS could only assure them that the examination he had undergone here had been almost equal to the examination he underwent in the House of Commons (Hear, hear, and laughter).

THE EXHAUSTION OF THE SOIL IN RELATION TO LANDLORDS' COVENANTS.

Two most important questions have been recently considered by the Central Farmers' Club, "The Exhaustion of the Soil in relation to Landlords' Covenants," and "Tenant-Right" as applicable to payments for unexhausted improvements. The first of these subjects was introduced by the distinguished experimenter, Mr. J. B. Lawes, of Rothamsted, and the subject of "Tenant-Right" was introduced by Mr. Corbet, Secretary of the Club, who is well known for his able advocacy of those agricultural questions with which the interests of tenant-farmers are intimately associated. The reading of Mr. Lawes' instructive paper on the exhaustion of the soil took place at the meeting proceeding that at which Mr. Corbet's paper was read; and the latter may be regarded as a sequel of the former. In considering Mr. Lawes' paper, we may remark that the experiments which have been conducted for a long series of years at Rothamsted are now generally regarded, from a scientific and practical point of view, as the most instructive of any which have hitherto been undertaken by scientific observers in Europe. We have more than once taken exceptions to some of Mr. Lawes' deductions from his experiments, especially his under-estimating of the important part which the mineral constituents of plant life perform in the building up of vegetable growth, more particularly of those plants which are utilised for the support of man and the domesticated animals.

Every one who has bestowed attention to the cultivation of the soil knows that there are extensive tracts in both hemispheres which have never been subjected to cultivation, and the plants which grow on them are not utilised by man; while countries which were at one time most productive in corn are now comparatively waste. Some of the wild animals which are supported by the spontaneous vegetation are preyed upon by a thinly-scattered population. The unreclaimed tracts of the world, particularly those of North America—which are, however, every day being rendered more accessible by railways—and of the lands in Europe, Asia, and Africa, accessible by the Mediterranean, are being gradually brought under the plough, and both wild animals and their hunters are giving way before the advancing pioneers of these unreclaimed lands.

As the ports of Great Britain are generally regarded as the ultimate destination of the surplus grain produce of both

hemispheres, the British farmer has yearly to compete with an increasing number of foreign producers of corn, which corn is imported to meet the consumptive demands of the British Islands. It appears from Mr. Lawes' experiments that the acreable produce of wheat from lands unmanured during the course of twenty-six years—wheat being grown in succession without an intervening green crop—equals that obtained from manured and unmanured lands in France and North America, as ascertained by the French and United States Governments, viz., between 15 and 16 bushels of wheat per acre. There is no statistical information of the lands annually under wheat in Great Britain. It has been estimated by some writers that 28 bushels, and by others, that 31 or 32 bushels are the average acreable produce of wheat in this country. The acreable produce being so much dependent on the condition of the land and the growing of prolific varieties, there is no reason why it should not be raised beyond the highest estimated average. What applies to wheat applies still more strongly to the other grain crops—barley, oats, and beans. It is chiefly by these means that an increased amount of produce from British soils is to be derived. The British farmer, in order to compete successfully, has to bestow increased attention on improving and maintaining the condition of the lands he occupies; and to do this he requires greater security than he has at present for the outlay of capital, with greater freedom of action than is generally accorded to him by the conditions in landlords' covenants.

Mr. Lawes proves that such changes would not involve any injury to the landowners, as the productive powers of land are not so dependent upon a rotation of crops as is generally believed.

Mr. Lawes graphically describes the changes which have taken place in the condition and practice of agriculture since the commencement of the present century. Previous to the use of bones as a manure and the introduction of guano, nitrate of soda, and auxiliary manures generally, the fertility of the soil was mainly dependent upon farmyard manure, which, being necessarily limited in amount, could not be applied in extra quantities to lands without the comparative impoverishment of adjoining lands.

The questions submitted by Mr. Lawes were: "1st, Whether, in order to preserve the soil from exhaustion, it is neces-

sary to enforce a fixed rotation of crops? 2nd, What are the best, or most generally applicable means at our disposal for the estimation of the value of unexhausted manures? As an illustration of the condition of land, he gave the result of a number of experiments conducted over a long period at Rothamsted. These experiments, to which we have already referred, conclusively prove that the condition of land can be maintained either by farmyard manure or by artificial manures, as was evidenced by the produce of grain crops and permanent meadow grasses. They further prove that the effects of farmyard manure are apparent for longer periods than those of the artificial manures he experimented with. These were mixed mineral manures and ammoniacal salts used together and separately. Mr. Lawes infers that the expenditure of capital in the purchase of cattle food, or direct manures, should be reckoned the property of the tenant; consequently on the termination of his holding, the tenant should be paid the value of the unexhausted manurial substances employed by him to raise the fertility of the land, whether these substances have been manures used on the lands or cattle food consumed by stock, the manures so produced having been applied to the lands. This system of payment for unexhausted manures is acted upon in some parts of England, chiefly in the county of Lincoln, and has been productive of great benefit to the occupying tenants, landowners, and the country generally. Without pursuing Mr. Lawes' paper further, or entering upon the points brought out in the discussion which followed the reading of it, we commend both to the consideration of all persons interested in the progress of agriculture and improved farm management, and still more to landowners and agents acting for them. Mr. Lawes' paper, with the discussion, appeared in last week's issue of the *North British Agriculturist*.

Mr. Corbet's paper on "Tenant-Right," with the discussion to which it gave rise, will be found in another part of to-day's impression. The subject of Tenant-Right has been for many years before the public. The late Philip Pusey, one of the most thoroughly practical agriculturists which ever sat in the House of Commons, zealously advocated the legalizing of a system of Tenant-Right, especially as regards the payment, at the termination of the tenant's occupancy, of the value of buildings erected at his own cost during the period he occupied the lands. Mr. Pusey three times successfully carried through the House of Commons his Bill, which provided for payment to the tenant of the value of buildings erected by him, the consent of the landlord to erect the buildings having

been first obtained. The House of Lords having on the three several occasions thrown out Mr. Pusey's Bill, he desisted from introducing it a fourth time into the House of Commons. Since then the law of landlord and tenant, as regards the erection of buildings, has been somewhat altered in England, and rendered more favourable to the tenant who erects buildings with the consent of the owner of entailed lands.

Since the introduction of the Irish Land Bill into the House of Commons, and the debates to which it has given rise, public opinion has made rapid advances towards the recognition by law of the claims of the occupying tenant of lands for payment of improvements effected by him during the period of his occupancy, whether these lands are situated in Ireland or Great Britain. The discussion which followed upon the reading of Mr. Corbet's paper may be taken as evidence that in England the occupiers of land may soon agitate for an English Land Law Bill. In Scotland the attention of farmers is at present occupied with the Game-laws, and they are disposed to wait until they see the ultimate fate of the Irish Land Bill, which Bill, or a similar one, will doubtless become law during the present or next session of Parliament. It should be obvious to landowners in Scotland, that while they have reaped the greater part of the benefits arising from the intelligence and enterprise of the tenant-occupiers, they have not generally bestowed much attention upon the claims of the improving tenants upon the termination of their leases, for repayment for any part of the improvements they have effected, whether in the erection of buildings, the reclamation of waste lands, or amelioration of the condition of lands which were reclaimed previous to their entry into their farms.

Hitherto a lease for the period of nineteen years has been held as a sufficient security in an agreement for the tenant indemnifying himself for the improvements he has effected, and that whatever these may be he shall give up the houses and lands to the landlord at the termination of the lease without any claim whatever for compensation. With the more general use of auxiliary manures and feeding stuff, however, the question is being forced upon farmers, should there be no payment for the manurial value of unexhausted manures; apart from the question, Should the landowner not reimburse the outgoing tenant for the value of any buildings erected by the tenant, and which are calculated to enhance the rent of the lands when in the market to be let to another tenant?—*The North British Agriculturist*.

THE AGRICULTURAL AND COMMERCIAL VALUE OF ARTIFICIAL MANURES.

Professor Voelcker has delivered a lecture at Derby to the members of the Derbyshire Agricultural Society on this subject, special reference being made to those manures most suitable for grass lands.

Dr. HITCHMAN presided, and, in introducing the lecturer, said: Like almost all men possessing great knowledge, Dr. Voelcker is most cautious in induction and modest in statement, and is ever ready to receive with courtesy and thankfulness any facts which may be communicated to him by practical and observant men. Facts from such a source are always most acceptable, provided they are facts, for it is a sad fact that there are many things alleged to be facts, and given in all good faith by the communicant as facts, which are nothing less than illusions, mistakes, part-truths, or entire blunders, and which, taking the place of facts, act as barriers to progress, prevent or retard discoveries, act, indeed, like sand-shoals in the ocean of truth, until their true nature has been revealed, and the alleged fact is found to be a phantom, what Lord Bacon would have named an idol, called into existence by false perception or erroneous induction. To observe accurately is a valuable quality, and one by the acquisition of which the most humble of us may contribute something to that great storehouse of knowledge, from which things new and old are being daily called forth by scientific minds for the benefit and instruction of mankind. I have watched with interest and admiration the career of Dr. Voelcker for more

than twenty years; and I confess that his industry, honesty, caution, practical sagacity, and inductive skill have excited my reverence and esteem. He has never been fond of indulging in "sensational" theories, has not emulated the brilliancy, the scientific romance, of some other great chemists, has never longed to "o'erstep the modesty of nature;" but with child-like docility he has sat at her feet, and with inexhaustible patience awaited her teachings, and then placed them in calm, clear language before his own auditors and readers; and if he has not dazzled us with the splendour of his genius, neither has he led us into quagmires by its delusive coruscations. I am, unfortunately, old enough to remember the hopes which were excited in the minds of ardent agriculturists by the earlier writings of Liebig and his imitators. Enthusiasts began to think that agricultural chemistry was an Aladdin's lamp, to conjure up corn crops from a deal board; and even soberer men expected that any number of crops might be successively raised from any plot of ground by substituting a few pounds of potash for the crops removed. Persons talked in such a manner of manuring a large field with a mere hatful of salts as to call forth the satirical remark that, when that took place, they might bring back the produce in the waistcoat pocket. Those days have passed; and practical chemists like Dr. Voelcker know that there is a wide difference between chemical compounds subjected to the influence of soils, of wind, of light, of moisture, cold, and warmth, in variable and

varying quantities, in the external air, and to the added influence of the special vital qualities of the growing plant, and the same compound obediently complying with the wishes of the chemist in the scales and retorts of his laboratory. Dr. Voelcker has conferred great benefits on the cultivators of arable soil, by his valuable analyses, by his description of fertilising earths, by his exposure of the frauds of dishonest manufacturers of cattle food and manures, and by the information he has imparted on the manures best adapted for special soils and seeds; and he has now, under the kind auspices of that wise and estimable friend of the farmer (and indeed of all classes) the right hon. Lord Vernon—now come among us, to tell us something of artificial manures and the agencies best adapted for the fertilization and sustentation of our grass lands.

Dr. VOELCKER in commencing his address said: He must be allowed, before commencing the actual subject of his lecture, to make a slight digression to congratulate all the members of that influential society who had taken so deep an interest in the establishment of the Cheese Factory in the town, that the undertaking had been placed in a position which gave every assurance of success. He was extremely gratified that the men of Derbyshire, who were not always proverbial for being in the front rank of agricultural improvement, had taken the wind out of the sails of other counties, and were certainly the leaders in what he could not but call a great national improvement, which must very materially influence the social, and, from the high price he hoped they would secure, the economic position of the farmers of the country. He had been delighted that day to find in Derby, in actual and successful operation, what he recommended so long ago as ten years—the Cheddar system of making cheese. It was about ten years since he investigated the subject of cheesemaking, and the result was that he came to the conclusion that the only method which admitted of being carried out successfully, on an extensive scale, was the Cheddar. The adoption of the factory system would relieve farmers' wives from much of the drudgery, not to call it the slavery under which the wives of dairy farmers at present suffered. It was a plan which, when strictly carried out in all its details, not by guess work, but according to definite rules, must give as definite results as to the observance of those rules would naturally imply. He had scattered those notions abroad ten years ago, and strange to say they were first taken up in America, and long before his papers were, he believed, much read in this country, the suggestions they contained were practically applied in America, and were sent back to us in the shape of a system which contained in it all the elements of success. There could not be a shadow of doubt that if they proved successful in their endeavours to carry out the American system, that they would see small factories springing up through the length and breadth of the land in all the dairy districts of England, and he most heartily wished them success in a project in which he had always felt the deepest interest. Coming now to the subject of Artificial Manures, he need hardly say that it was a subject of annually increasing importance, for where five or ten years ago men spent their tens of pounds in the purchase of artificial manures they now spend their hundreds, and those who spent their hundreds now spend their thousands. To see how important the question was becoming they need only look at the many manufactories of artificial manures which were springing up everywhere, and at the keen competition which existed between rival dealers; indeed, the dealer in artificial manure had become one of the greatest bores in the market. They could not go into a market without being pestered by some agent for an artificial manure manufacturer, who praised his wares often to the detriment of those of his rivals. There were now makers who produced from thirty to forty thousand tons per annum; others twenty and ten thousand, and some a thousand or five hundred. Very large sums were invested in the manufacture, and it was unnecessary to say that large sums were paid annually for these manures by agriculturists who must, in the present day, if they would successfully cultivate their land, spend a good deal of money for the purchase of these manures; for the present state of agriculture necessitated the application to the soil of more fertilizing agents than could be conveniently obtained from farm-yard manure. Seeing that so large an amount was spent on these manures, it was of the greatest importance to the farmer that he should lay out his money to the greatest

advantage, and how could he do this unless he possessed some knowledge of the fertilizing constituents which enter into the composition of the manures offered for sale? The time was long past when the fertilizing powers of certain materials were ascribed to a certain unknown force, and they now knew pretty well on what substances the value—both economical or money value, and the fertilizing or practical value—of the manures depended. It was not by any process of cooking or of turning over that they could obtain good manures; they could only secure them by incorporating the right materials. There was a time when a mistaken notion prevailed that farm-yard manure should be turned three times, and that it got better every time. Now there was, as was generally the case, a little truth mixed up with the error involved in that idea. To turn manure helped to make it rotten, and rotten manure was better than fresh, bulk for bulk; but by its standing exposed it was apt to lose a great deal of its fertilizing properties, and the more economical plan was to cart the dung to the field as soon as possible, and then they avoided the risk of losing a portion of its valuable properties by evaporation or by drainage. They knew well that the value of animal manure depended very much upon what they put into the animal's belly, and that it would be very different if they used plenty of oil cake, or other rich food, than if they gave their stock an insufficient amount of poor food. So with artificial manures. Their value depended on the materials put into them. They might concoct a manure of the sewage matter of London, or Birmingham, or Derby, by sifting out its solid parts, but its fertilizing value would be very little, and it would largely consist of soil, clay, or sand, with some organic matter of no great value. They must not expect to get much fertilizing matter from town sewage, unless they incorporated with it a good deal of Peruvian guano, or good bone dust, or nitrate of soda. The fertilizing value of manures depended mainly on the nitrogenous matters, phosphates, and salts of potash they contained. Nitrogenous matter was derived from animals, and existed largely in blood, flesh, skin, hair, and other refuse animal matters. Dried flesh contained almost as much nitrogen as Peruvian guano. As a rule ammoniacal salts produced bulk, and phosphates produced quality, and his aim would be to get both. He would now direct their attention to a few of the more commonly used artificial manures. The fertilizing value of guano depended essentially on the amount of nitrogenous matter, which was measured by the amount of ammonia it yielded. The fertilizing value of guano was declining. Formerly it would often contain 19 per cent. of ammonia, but that was a great rarity at present. A few years ago they might fairly have expected 16 per cent., and often 17 or 18 per cent., with very little insoluble silicious matter, which was only a long name for their old friend sand. Dr. Voelcker then directed attention to a diagram showing the composition of four samples of guano, and of which the following is a copy:

	I.	II.	III.	IV.
Phosphates of lime	25.07	19.31	30.98	42.93
Organic matter:—				
Ammoniacal salts	52.98	59.11	33.94	19.79
Insoluble silicious matter 1.50	1.45	14.50	9.36	
Yield of Ammonia	17.21	19.30	11.80	4.35

This showed that whilst two specimens of Peruvian guano contained about one-and-a-half per cent. of sand, another, which was evidently adulterated, contained 14½ per cent., and another nearly nine-and-a-half. The last had once been Peruvian guano, but it had suffered from the action of the weather and the sea water, and its valuable constituents had been washed out. Whilst the first yielded upwards of 17 and the second upwards of 19 per cent. of ammonia, this yielded only 4½ per cent. The ammonia was easily removed by the exposure and washing of the sea, but this specimen contained a good deal of the phosphatic materials, which were not so valuable, and were not so easily affected by the water. It was really guano no longer. Peruvian guano was getting less and less valuable, and if they could this year get it from the Government directors' stores to yield 15 per cent. of ammonia, they would have no reason to grumble, and they would have a good chance of getting only 13 per cent. The manufacturers knew well the difference in the value according to the yield of ammonia. Each per-centage of ammonia in a ton was worth 12s. to 16s., so that the difference between 13 per

cent. and 16 per cent. would be at least 36s. in value. If they paid £14 per ton for guano yielding 16 per cent. of ammonia, which they might fairly expect to do, they ought to pay 36s. less, if the yield was only 13 per cent. all the other circumstances being equal; and he had no hesitation in saying that many a farmer had paid too dearly for Peruvian guano. The importers could always sell the good guano to the manufacturers, and he was not sure whether farmers could not now often buy prepared artificial manures more cheaply than Peruvian guano. At any rate it was manifestly unjust to charge the same for Peruvian guano yielding 13 per cent. of ammonia, as for that which yielded 16 per cent. It was the interest of the farmer to put the screw upon the dealers in this matter. An inferior guano was perhaps the dearest thing the farmer could buy. Genuine guano was light in colour; it had not a pungent but an aromatic smell, and a cheesy flavour when tasted, which was derived from the undigested fish on which the birds fed, and which disappeared when it had been washed by the sea. The inferior guano was discoloured, and was generally of a darkish brown, somewhat like the colour of varnished oak when neither very new nor very old, and invariably lost the peculiar taste to which he had referred. Inferior guano always weighed more in proportion to the bulk than the best. It should not exceed 68 or 70 lbs. per bushel. By applying those tests every farmer could tell whether the article was genuine or not, or whether it was of inferior quality or not. He had had many samples of guano direct from the importers, and from respectable dealers, which contained 12 or 14 per cent. of sand. It had not been mixed with it purposely, but the guano had been scraped too near the rock, and some of the rock had found its way into it. The sand should not exceed two or three, or at most four per cent., as it was dear at £14 a ton. He would strongly urge them, as practical men, to agitate the question of the purchase of guano being so regulated that they might buy it to pay only for what valuable properties they actually received, and not to pay alike for good and bad. Nitrate of soda was often used with great advantage, especially for cereals, and it was useful as a spring dressing for wheat, but like many other manures of high value it was often adulterated, and often a large quantity of common salt was mixed with it. Not long ago a Worcestershire dealer in manure went to him, and asked, "What are we to do this season? The price of nitrate is going up so frightfully that we cannot sell it unless it is mixed with salt. If I don't do that my customers won't buy at all." He mentioned that as an example, and all the cases to which he referred had come under his own experience, or were vouched for by correspondence. They were not the creations of fancy. Now as the retail price of nitrate of soda was £17 per ton, and that of common salt 16s. to £1, it was plain that a mixture of ten per cent. of common salt would pay very well. Whilst all manures were very much adulterated, none were so much adulterated as bone dust. It was extremely difficult to get genuine bone dust, as bones were getting scarcer and scarcer. People had learnt to appreciate their value as manures, and they had also learnt to appreciate the comparative value of bone phosphate, in comparison with mineral phosphate, which was used extensively in the shape of coprolite. The superior value of bone phosphate arose from its containing a large proportion of nitrogen, and genuine bone dust yielded from 4½ to 5 per cent. of ammonia. For pasture land he preferred steamed bones to boiled bones, because in steamed bones the fat, which was naturally contained in a large proportion in bones, was removed. Fat, as an element in bones, had no fertilizing qualities whatever. It consisted of carbon and hydrogen, and they need not trouble themselves to supply those elements to the plants. Fat was decidedly injurious in its effects, for it prevented the decomposition of the bone dust, and fresh bone would be in the land for many years before it came into active play, the fat preventing the rain from affecting it. Bone dust put into a heap, especially when it was a little wet, heated; and the effect was to cause the ammonia to combine with the fat and to make what was called ammonia soap, which would not prevent the rain obtaining access to the bone phosphate which was then rapidly brought into operation. Superphosphate was another kind of manure on which he would offer a few remarks. He was often asked to give the composition of a good superphosphate, and also what was a fair price for it. The general answer to the second question was, "As much as it is worth."

The determination of the value of a superphosphate was not easy. It could not be ascertained by merely looking at it, or handling it, or smelling it. It might be necessary to handle it to see its condition, whether it was dry, and so on; but they could not test its value by smelling at it. Pointing to a table showing analyses of eight specimens of superphosphates, Dr. Voelker said the value of a superphosphate of lime depended on the amount of soluble phosphate of lime it contained, and the amount, in comparison, of insoluble phosphate. The former would be greatest in the case of bone dust, the latter in the case of mineral phosphate, and that made all the difference. Coprolite, which was a mineral phosphate, had hardly any practical value. In the next place the value of a superphosphate depended upon the amount of organic matter it contained, and a very good test of that was the amount of ammonia it yielded. Speaking generally, the value was regulated by the amount of soluble phosphate of lime. The quantity varied from 10 per cent. to as much as 40 per cent. It was entirely a question of what they would pay. They might say, "I pay, say £6 per ton; what sort of manure should I get for it?" or they might say, "Here is a manure, what ought I to pay for it?" His advice was that it should be bought at a rate fixed according to the quantity of soluble phosphate it contained—so much for each per centage of soluble phosphate—say 3s. 4d. to 4s. per cent. There was a class of manures termed phospho-guanos, some of which were very good. They were a mixture of phosphates with ammoniacal salts, and combined the good qualities of superphosphates and of guano. They were sold under various names. Their value depended on the amount of soluble or insoluble phosphates, and the amount of ammoniacal salts which were present. Another class was that of nitro-phosphates, which was only another name for a description of superphosphates. These often did not contain nearly so much nitrogenous matter as ordinary bone superphosphates. Fraudulent mixtures, he was sorry to say, were very frequently sold in England. There was one which had almost gone the round of every county, for after being exposed in one place it was sold with vigour in another district. It was not improving. One sample he had analysed yielded six-tenths per cent. of ammonia, a later one a third per cent., and the last not a trace. It consisted of gypsum, salt, and vitriol, and was of no value whatever. It was true that the proprietor got many testimonials, and no doubt most of them were genuine, but it was not difficult to see how they were obtained. Small specimen bags were sent gratis to a number of persons with a request for a statement of the results, and the maker wisely advised that only a small quantity should be used, not exceeding 1 cwt. or 1½ cwt. per acre, and for the simple reason that if used in any quantity it would seriously injure the land. Every one knew that the result of the best manures was peculiarly affected by the season, and that a crop which had been treated with the best manure would sometimes look worse than one badly manured. Hence a certain number of crops to which this stuff was applied would turn out pretty well, and as all the worst results went into the waste-paper basket, in the course of a few years (with a liberal distribution of samples) a good many testimonials were obtained. It was impossible to form a decided opinion of the value of manures without repeated trials under different circumstances, there was so much variety in the seasons; and he would advise them not now to spend any money in top-dressing, the season was far too much advanced for it, and it would do more harm than good. Nitrogen existed in organic matters, in the shape of ammoniacal salts, in the shape of nitrates, which consisted of nitrogen and hydrogen, and as nitric acid, which consisted of nitrogen in combination with oxygen. The next in value to nitrogenous compounds as fertilizing elements were phosphates, which were compounds of phosphoric acid with another substance, often with lime, and were very important elements in many artificial manures. The third class of fertilizing substances was salts of potash, and the value of an artificial manure, speaking generally, depended on the quantities it contained of nitrogenous matters, phosphate of lime, or potash salts. Of course there were other matters essential to the growth of plants, but they were of minor importance because they either existed naturally in abundance in the soil, or if not they could be readily supplied in a cheap form. Gypsum, for instance, was a useful fertilizer on many soils; but it would be better to apply it directly to the land requiring it than to buy it in the

shape of artificial manure. Lime was very valuable on some land, and especially pasture land, and also on some arable land; but he need not say that it answered infinitely better to lime the land than to buy lime in the shape of artificial manure. So common salt was another useful fertiliser, and mixed with lime was the means of renovating many poor pastures; but they could use those materials in their ordinary form. He would name a few constituents that should not be present at all, or only in the smallest possible quantities, in artificial manures. They did not want vegetable matter in the shape of peat, or sawdust, or rotten straw, or such cheap substances, which he was sorry to say sometimes entered very largely into the composition of artificial manures. Peat had been called one of the best friends which artificial manufacturers had; and he knew that sawdust, impregnated with sulphuric acid, often did duty for superphosphate. Superphosphate was an acid substance, and was often cleverly simulated by acid sawdust. There was a manure called bone phosphate, which did not contain bone or phosphate in any shape or form. Sand was a substance which should exist in artificial manures in as small a proportion as it was possible to obtain it. It was impossible for any commercial product to be chemically pure, and substances could not be dealt with for the purpose of manufacture without a little sand being introduced into them, and it was found in small quantities in the best artificial manures, but the quantity should be as small as possible. So far as the value of manures depended on the matters employed in compounding them, it could be ascertained by analysis, but their value depended also on the form in which the elements of fertility existed in them. In certain combinations nitrogen acted much more rapidly on vegetation than in others. Nitrate of soda when properly washed into the soil showed its effects in the course of three or four days, by imparting a darker colour and a healthier appearance to the grass. But this would not be witnessed in dry weather, and it was only fit to be applied in showery weather, or it would be lost. It was the most powerful form in which they could apply nitrogen to the soil, was most easily taken up by the plant, and the quickest in its effects; but it readily disappeared from the soil, and those substances which were quickest in their operation most readily passed away in drainage and otherwise. Ammonia in the shape of ammoniacal salts was not quite so active as nitrate of soda, so that it could be applied with less risk of being lost. They might top-dress the land with manure containing ammoniacal salts in the autumn, but it would be a bad plan to top-dress with nitrate of soda. It was a remarkable fact that the soil possessed a special power of laying hold of ammonia in the form of ammoniacal salts. That constituted, he considered, the second stage in which nitrogenous matters were presented to the plant, an intermediate stage between the crude fertilizing material, such as they found in fresh manure, or in dried blood or flesh, which entered into fermentation readily, and was changed into ammoniacal salts. The soil readily laid hold of these ammoniacal salts, and during the winter months converted them into nitric acid, which was, he believed, the form in which nitrogen was taken up by the crops. That was a lesson from Nature that time should not be lost, but that the farmer should make good use of his spare time, and cart his manure to the land as soon as his leisure would admit of it. It would never do to apply fresh manure, as they well knew, in the spring. It would have very little effect comparatively on the root crops. Rotten dung answered a great deal better, for the simple reason that it had undergone the necessary change, that the nitrogenous matter existed in it in the appropriate form. In considering the value of artificial manures they must consider, not only the value of the materials which entered into them, but also the form in which they existed in the manure. They might have nitrogenous matter, for instance, in the shape of nitrate of soda, Peruvian guano, or dried blood, in which case it readily became effective; or again in the shape of shoddy or wool refuse, which required a long time before it came into action, unless specially prepared. Ammonia existed in shoddy or wool refuse, but it was impregnated with greasy or fatty matter, which prevented its decomposition; and this greatly detracted from its value. Again, nitrogen occurred in leather; but do what they would with leather, let them reduce it to the finest powder, the nitrogen would remain inactive. Some manufacturers knew well how to compound a manure, which on analysis would

show a large per-centage of nitrogen; but it made all the difference whether it was in such a form as leather powder, or as Peruvian guano, in which latter shape it was readily taken up by the soil. He would rather have one per cent. of nitrogen in the shape of sulphate of ammonia, than six per cent. in the shape of powdered leather. They must not, therefore, too implicitly trust to analyses, which were sometimes made for sale as much as the manures themselves. A mere number of figures of per-centages would not put them into a proper position to judge of the true value of manures, but they would show in what force the various constituents figured in the analysis were present in the manure. Another point was the mechanical condition of the manure, whether dry or wet, whether finely powdered or lumpy, which had a material influence on its value. Dryness and fineness of division could not be obtained without expense, but the farmer was well repaid for paying something like 7s. 6d. or even 10s. per ton extra for a manure in a dry and finely powdered condition. Again the fertilizing value of manure depended very much on the use the farmer made of it. Certain manures answered best for cereal crops, and others for root crops; some were adapted for one kind of soil and some for another; and their value also depended on their being applied at the right time of the year, and in right manner. Some years ago he made a series of experiments with a variety of artificial manures as applied to grass land, and the result of those experiments, carried out on a tolerably large scale in several counties in England, was to lead him to the conclusion that the most economical and most efficient manure which could be applied to grass lands was good farmyard manure. No manure produced so good a result, if they could get plenty of it, as good stable dung on grass land; but as they could not always get enough they must get the next best, or the land, instead of becoming richer, would become poorer and poorer. In determining what was the best substitute they had to consider what was the character of the land. If, as was the case with most of the Derby pastures, the land required lime they should lime it well, and having done so leave it for a couple of years without putting any manure at all upon it. His experience showed that in most counties of England it was desirable to apply bones to grass land, but bones never did well on newly limed land, and in many cases where it had been so applied he had not been able to see even where the bones went to. It was very important to settle the point whether the land needed lime. If the herbage looked unhealthy or deathlike, as people said, they might take a little of the soil, and pour upon it weak spirits of salt, and if there was an effervescence that would be an indication that there was enough lime. If they tested the land in that locality, they would find that by far the larger part of the pasture land required lime. The effects of liming might be regarded as permanent, and after its application they should adopt other means. Supposing the lime to be thoroughly incorporated with the land, the next thing to decide was whether bones would answer as a manure. There were no general rules which would hold good under all circumstances. On some descriptions of land bones had little effect, on others the effect was perfectly marvellous. Speaking generally on heavy soils fresh bone dust, at any rate, did not show so well as on light and more porous soils; and as bone manure was rather expensive at the present time it was well to make an experiment on a small scale before applying it extensively. The result of his inquiries went to show that all good artificial manures for grass lands should contain a certain proportion of phosphatic materials, if possible in the shape of bonedust; and light land should also be supplied with salt of potash. Pasture lands, to yield a good crop, must be also supplied with a considerable proportion of nitrogenous matter in the shape of ammoniacal salts, and he would recommend for light pasture lands mixtures of manures, which should include potash—a good deal of which was now got from Germany, where it had been discovered in a state called kainit. They ought to pay for that something like £3 to £3 10s. per ton retail. It was imported into England for something like £2 10s. It was retailed at £4, which was rather too much profit, and the farmers should insist upon getting it for less, and the dealers could well afford to reduce the price. He would recommend for light marly grass land one cwt. of superphosphate, which would cost 6s.; 2 cwt. of bone dust, which at 7s. 6d. would be 15s.; 2 cwt. of potash salt at 4s., which would be 8s.; and 1½ cwt. of Peruvian guano, which

would be £1 or 21s., making a total of £2 10s. per acre. He would not advise them to lay out less than that, if they wished to apply artificial manure to grass lands at all, as he thought it would be like wasting away powder by dribbling it into the breech lock of a gun, where it would produce no effect. Two cwt. of bone dust, and the same quantity of Peruvian guano, and $\frac{1}{2}$ cwt. of nitrate of soda made a very good dressing for light grass land. On heavy soils they might leave out the potash salts, more especially if they contained a fair proportion of the better description of the more unctuous kinds of red clay. In buying artificial manure they should first ascertain what would suit the land, and they could ascertain that for themselves, if they were not ashamed of being called experimenting farmers; and every farmer should be that, for observation and experiment were essential to progress. He would advise them to deal with respectable men, who had a reputation to lose, for in buying cheap manure from some one who went on for a short time and then failed, they would, in the long run, not gain any advantage. He would advise them not to be led astray by statements of analytical results, for, as he had stated, nitrogen might be present in the form of leather, or phosphate in an insoluble mineral, like coprolite, which would have very little effect. He would not, on the whole, advise them to deal with their brother farmers, who made a little manure, and chopped a few horses, and so on; as generally speaking they would get an inferior article. He would not recommend them to buy cheap manures, and he showed by reference to analyses that many of the cheap manures were by far the dearest. Some of these manures consisted mainly of dried night soil, which was perhaps worth about 5s. for a good cartload, and which were sold at £3 or £4 per ton. If

they bought superphosphate they should buy by analysis, and when they were certain that they had got what they wanted, they must give the price for it. In buying nitrate of soda they should have a guarantee stating the amount of impurities it contained—5, 6, 7, or 8 per cent. This was called "refraction," and deducting it would show the amount of nitrate it contained. He should have liked to have spoken on the question of Supply Associations, for the purpose of ensuring genuine manures, but could only recommend the question to them for discussion. Such associations were springing up in various counties in England, and some were carried on in a very profitable manner.

In reply to Mr. Robinson, of Melbourne, Dr. VOELCKER said there was no better easy test of guano than weighing, filling the bushel lightly, and sweeping it off level; and the weight as above stated should not exceed 68 or 70 pounds. Any material mixed with guano weighed heavier, and they would find some weighing 72, 73, and even 74 lbs. The test of the application of quick lime with a view to determine the amount of ammonia could not be relied upon, as a small quantity of ammonia would produce a good deal of effervescence, and cause a strong smell. Hence dealers in inferior manures were fond of putting that test forward.

Col. WILMOT proposed a vote of thanks to Dr. Voelcker for his lecture.

The Hon. E. K. COKE in seconding the vote of thanks observed, that whilst that large audience was there full of practice, Dr. Voelcker was there full of science, and the combination of the two was what they wanted.

Dr. VOELCKER returned thanks, and the meeting broke up.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

HALF-YEARLY MEETING.

The half-yearly meeting of this Society was held at noon on Monday, May 23, in Hanover Square.

In the absence of the President, his Grace the Duke of Devonshire, the chair was taken by Lord Walsingham. The attendance was very small, owing probably, in a great degree, to the circumstance of the meeting happening to fall this year upon a Monday, under the provision of the Charter relating to the period for holding it.

The Trustees and Vice-Presidents were re-elected. The House-List of Members of the Council submitted to the meeting was adopted. There was only one new member elected, namely, Mr. William Earle Welby, M.P., Newton House, Folkingham, Lincolnshire.

The Secretary, Mr. H. M. Jenkins, then read the Report of the Council, which was as follows:

Since the last general meeting in December 4 Governors and 69 Members have died, and the names of 199 Members have been removed from the list; on the other hand 1 Governor and 212 Members have been elected, so that the Society now consists of

- 74 Life Governors
- 74 Annual Governors
- 1,511 Life Members
- 3,764 Annual Members, and
- 15 Honorary Members,

making a total of 5,438. The half-yearly statement of accounts to the 31st December, 1869, has been examined and certified by the auditors and accountants of the Society. This statement was published in the last number of the *Journal* together with the Manchester country meeting account, and a balance-sheet for the whole year 1869. The last-mentioned document shows that independently of the financial results of the country

meeting at Manchester, and after charging on income the cost of all additions to the permanent country meeting plant, the receipts of the year exceeded the expenditure by a sum of £675. The funded capital of the Society remains the same as at the last half-yearly meeting, namely, the permanent fund of £20,000 New Three per Cents., and the Reserve Show-fund of £4,612 7s. 8d. New Three per Cents. In addition, the sum of £3,800 lies on deposit with the Society's bankers, and the balance of the current account on the 1st instant was £3,583 0s. 10d. The Council have granted a sum of £500 to the Manchester Local Committee, in aid of the extra and exceptional expense occasioned by the compensation awarded to the tenant of the trial-ground. Mr. Charles Whitehead, of Barming House, Maidstone, Kent, has been elected a member of Council to fill the vacancy caused by the election of his Grace the Duke of Devonshire, K.G., as a vice-president. At the first anniversary meeting of the English Agricultural Society, held thirty-one years ago it was stated that the prizes offered for stock to be shown at the then approaching Oxford meeting would amount altogether to £740, besides £50 for extra stock, implements, roots, and seeds, £50 for draining plough, and two prizes of 50 sovereigns each for the best specimens of white and red seed-wheat. At the forthcoming Oxford meeting the prizes to be competed for amount to £3,130 for live stock, and £395 in addition to ten silver medals for implements. A contrast of these figures will enable the members to realize the growth of the Society's operations during the interval; and to estimate the nature and extent of its influence on the progress of British agriculture. The interest thus attaching to Oxford, where the first country meeting of the Society was held, promises to invest the forthcoming show with unusual attractions. The show,

yards for implements and live stock comprise nearly sixty acres. The entries for implements, machinery, &c., which closed on the 1st instant, prove that in this respect the display will be quite as extensive as the remarkable collection exhibited last year; while it is confidently anticipated that certain classes of live stock will be extremely well represented. Another element of instruction and interest will be found in the competition for the prizes offered last year by the then High Sheriff of Oxfordshire, and the Society, for the two best managed farms in the district round Oxford. A list of the competitors (21 in number) and the names of the judges appointed by the Council have already been published; and it is hoped that the awards of the prizes may be made known at the general meeting of members held in the showyard. The Council resolved last year, that the society's country meeting for 1871 should be held in the division comprising North Wales, and the Counties of Cheshire, Shropshire, and Staffordshire. Invitations having been received from the authorities of Shrewsbury, Stafford, and Wolverhampton, a committee was appointed to inspect and report upon the various sites and other accommodation offered by the competing localities. After duly considering the report of this Committee, and after a conference with deputations from the three towns, the Council have decided that the Country-meeting for 1871 shall be held at Wolverhampton. The Council have also to announce that the Country-meeting for 1872 will be held in the district comprising South Wales and the counties of Gloucester, Hereford, Monmouth, and Worcester. The President and Council of the Société des Agriculteurs de France have invited the Royal Agricultural Society of England to take part in an International Agricultural Congress to be held next year in Paris, and to furnish a report on British agriculture. They also request suggestions as to any of the subjects of interest which should be discussed at the Congress. The Council have determined to accept this invitation, and have suggested the following as subjects worthy of discussion, and affording opportunities of illustrating the present position of English agriculture:—(1) Drainage, (2) Implements and Machinery, (3) Manures, (4) Rotation of Crops, (5) Fattening of Cattle and Sheep, and (6) the Labourer. In accordance with the resolution mentioned in the last half-yearly report of the Council, the Society's consulting chemist has presented two quarterly reports on samples of guanos and bone manures forwarded to him for analysis by Members of the Society. The immense increase in the manufacture of artificial manures and feeding stuffs, and the competition amongst dealers and manufacturers, have introduced into the market low-priced and inferior articles, which often tempt purchasers by their apparent cheapness. It was hoped therefore that the publication of analyses of different manures and feeding stuffs submitted to the consulting chemist might render purchasers more cautious in their dealings, and prevent that disappointment which follows the purchase of inferior or adulterated articles, and the Council have reason to believe that the publication of these quarterly reports in the Agricultural Journals has already been productive of good results. The Council have resolved that in future, the annual grant of £200 to the Royal Veterinary College shall be divided under two heads: (1) That £150 shall be paid to the Royal Veterinary College, for the general advancement of veterinary science in reference to cattle, sheep, and pigs, as heretofore; and (2) That £50 shall be retained under the control of the Council for the purpose of being applied to experiments on the diseases of cattle, sheep, and pigs. The Council have directed their attention to the desirability of improving the society's library, by the purchase of recent works bearing on the practice and science of agriculture, together with such

Parliamentary papers and reports as refer to agricultural subjects; and they confidently anticipate that a useful library of reference will shortly be at the command of the members.

Lord CATECART said he felt great pleasure in proposing that Lord Vernon should be the president for the ensuing year, adding that his lordship had worked very well in the cause of the Society.

Mr. FREEBODY seconded the motion, which was then adopted unanimously.

Mr. BOTLEY, in moving the adoption of the report, remarked on its satisfactory character, shewing as it did what vast progress had been made since the meeting held at Oxford 31 years ago. He particularly congratulated the meeting on the paragraph relating to the International Agricultural Congress at Paris, and he expressed his belief that England would more than hold her own on that occasion, and that the gathering would tend to the advancement of agriculture all over the world.

Mr. ROBERTS, in seconding the motion, entered into some elaborate remarks in reference to the future of the Society. As regarded implements, he considered that, however desirable it might have been to give prizes many years ago, it was not so now, as inventors and manufacturers obtained an ample reward without any of the money of the Society. As to the improvement of agricultural or farming operations, he maintained that the Society had not carried out its motto, "Science with practice," and that Mr. Lawes of Rothamstead had done more for agriculture in that respect than the Royal Agricultural Society. As regarded the important question of agricultural education, he expressed regret that the examinations must be considered a failure this year, there being no mention of them in the report, and expressed his conviction that this failure was owing to the limitation of age to 21.

Mr. FREEBODY said, occupying as he did the position of No. 41 in the list of life-members, he regretted to say that he agreed very much with those who thought that the Society had not fulfilled its duty or its mission. He disapproved of the Society's keeping such a large balance, instead of employing it for the improvement of agriculture; while as respected Mr. Mason's prize for the best farm in the Oxford district, he urged that the competition ought not to have been clogged as it was with pecuniary conditions. He afterwards criticised the manner and matter of the *Journal*, and the unsatisfactory result of the inquiries with respect to cheesemaking. He intimated that at a future meeting, he should propose some such resolution as the following:—"That a committee, to consist of 3 governors, 3 life-members, 3 annual subscribers, and 1 honorary member; not heretofore in any way employed by this Society, be appointed to inquire and confer with its present honorary and official staff, in order to report at the next general meeting what measures this Society can best adopt in order that some of its accrued founded capital should become of greater practical service towards the general advancement of English Agriculture, than of being invested in the New Three per Cents."

Mr. DENT, in replying, contended that the reports issued from time to time on the authority of the Council on practical agricultural questions, were very valuable, instancing those relating to the growth of cloverseed and of mangold wurtzel, and the experiments of Professor Voelcker upon various kinds of manures sent by farmers for analysis. He was surprised at Mr. Freebody's comments on the *Journal*, as it was generally admitted that it exhibited great improvement, especially the two last numbers (Hear, hear). The Society's balance would soon be exhausted if it kept an experimental farm with an expensive manager and staff.

After some further remarks by the Chairman, Sir Massey Lopes, and Mr. Wells, M.P., the latter of whom stated that only two candidates had presented themselves for examination in agriculture,

The Report was adopted, and the meeting terminated with some formal votes of thanks.

KINGSCOTE AGRICULTURAL ASSOCIATION.

FARM-YARD MANURE.

At the last monthly meeting for the season, Mr. H. HAYWARD read the opening paper, in which he said: When I commenced my agricultural education—which, as my grey hairs indicate, must have been a good many years ago—Cirencester College was not thought of, and chemistry as applied to farming was in its infancy; consequently I had not the advantage of receiving the instruction in that branch of the science of agriculture which is now so generally taught, and which institution no doubt has very good results when not, as is sometimes the case, carried too far—for, at the same time that I admit a scientific education to be very important, I am bound to confess that I have not unfrequently observed considerable losses sustained by its taking precedence of practical knowledge, and my advice to young men learning farming is to acquire a thorough knowledge of the practical part *first*, and study the scientific as much as they like afterwards. The manure subject, as a whole, embraces so extensive a field, that I have thought it best to confine the few remarks I am going to make this evening to the value and management of real manure, and only to allude to other varieties when finding it necessary to do so for the purpose of comparison. So much is written and said by scientific men of the present day about artificial manures, that I feel disposed, as an old practical farmer, to stand to my colours, and say all I can to support our truly conservative friend—the dung-heap; for unless it found some such supporters in men of the old school, like myself—judging from what is too often seen—it would, I fear, be less thought of, and become more neglected than ever, thus necessitating its place being filled by its more fashionable artificial relations. Farm-yard manure, properly speaking, is the residual produce of all vegetable substances employed in the feeding and littering of the various kinds of live stock kept within the precincts of a farm-yard. It therefore contains all the elements of the food and litter consumed by live stock, excepting those which are converted into flesh, bones, milk, &c., and it is scarcely necessary to say that the better the cattle are fed, the better will be their manure; indeed, I consider nothing to be more profitable than giving store cattle a moderate quantity of linseed cake with their rough fodder when a sufficient supply of roots is not obtainable, as not only benefiting the animals, but greatly improving the dung-heap, and thereby economising the use of artificial manure. Of all the kinds of manure known and used, I believe it is the general opinion that that coming under the denomination of “farmyard manure” is the most efficient; and containing, as it does, all the food upon which plants thrive, it must necessarily be of the greatest importance to the farmer that it should be managed in the best possible way. Owing to neglect, great waste of this valuable article is by far too general; one writer goes so far as to say “Good management will produce double the amount obtained under neglect”—and I am disposed to agree with him. Inconveniently arranged yards and buildings are very frequently an obstacle. But this evil, which can only be rectified by the landlord, should not be made an excuse for mismanagement; on the contrary, then is the necessity the greater for care and economy. In alluding to bad practices, too generally in use, I will mention that of allowing manure to accumulate in open yards, or in heaps thrown out of feeding stalls and stables much too long, before removing it to the dung-heap: thus exposed to the washing of the rain and to the water which runs off unshooted buildings, a valuable portion is carried away and consequently lost. There is, of course, a time when it is in the most advantageous state to be carted away and made up into a well-constructed heap, that time depending upon how thick the cattle have been kept in the yard, and the amount of litter supplied; but it should not remain long enough to get too rotten, or a loss will be sustained by the liquid manure running from it; just before that would take place I conceive to be the best time, instead of its remaining the whole winter, then to be turned up in the yards where it has been made. Independently of other losses, it is not easy in this way to make the heap of equal quality throughout, seeing that round

the cribs and under the sheds it will be much better than over the other parts of the yard; and seeing that as turned up so it will go to the field, an unequal manuring will be the result; whereas if taken away at proper intervals to some other convenient place, and the carts drawn over the heap in forming, waste from over-heating and other causes will be prevented, and the dung will be equal in quality throughout. Another bad practice which I will mention as being frequently seen in this neighbourhood is the way in which heaps are formed by the roadside, or in waste places, for weeks or perhaps months together, by shooting up a few loads occasionally, and these not even thrown up into form, as if the object were to get rid of a nuisance instead of husbanding a valuable commodity—one end perhaps being good rotten dung, the other inferior, or mould or road-earth, which is valuable no doubt as a mixture, but can only properly be made so by putting it under or carting it over the heap in regular layers. A dung-heap got up in this manner, and remaining a long time without having been consolidated by pressure, will not only lose in quantity and quality, but be uneven in value, one end of the heap proving good, and the other bad, so that when spread on the land the same uneven dressing will be the result as when heaped in the yards. There is another method very general upon the Cotswold Hills, certainly superior to that I have just described, but still wasteful, and which may be greatly improved upon: I mean the making heaps through the autumn and winter—at certain distances apart, in the fields where it is to be applied for roots in the spring. The plan no doubt is convenient so far as that it provides the manure near at hand when required to be ploughed in at a busy time; but the loss from evaporation and the washing of a winter's rain must be very evident, and far out-weighs the economising of labour; I believe if any person would count the loads carted out, and count them again when used, he would find the loss to be so great that he would be induced to alter his system to that of forming larger and more consolidated structures. Still, I see no objection to later-made dung, required for almost immediate use, being made up by backing the carts against the heap instead of driving over; it then lies more loosely together, ferments more rapidly, and, if frequently turned and separated, will soon acquire that rotten mixture which enables it to be easily ploughed in. Horse-dung should from time to time be spread over the cattle yards, and not remain as thrown out of the stables until in a state of fermentation, being more valuable so mixed, at the same time doing the cattle good, and preventing loss by evaporation. I doubt whether there is any operation upon a farm of greater importance than that of clearing out and re-littering yards. It is, therefore, my opinion that no other work should be allowed to interfere with heaping your manure at the proper time. There are many who think nothing of expending money upon guano, superphosphate, and various concoctions of the present day, and begrudge the labour that might be so profitably expended upon the natural article. It is not easy to explain the exact time at which an open yard should be cleaned out and re-littered; but I think it should be as soon as possible after the liquid begins to drain from it in a discoloured state. Liquid-manure tanks, which promised to become very general some years ago, appear to have been more valued in theory than in practice, as we hear but little about them now, and those who adopted the plan seem in most cases to have relinquished it, proving that it did not pay. The best method therefore must be to prevent as far as possible the loss of this valuable part of the manure, which, I hope to show, may in a great measure be done by the proper construction of the dung heap. Dung made by cattle fed in boxes is fit for immediate use, and cannot be more economically treated than by carting it direct to the field and ploughing it in at once: not so with regard to long dung from the open yards, for, although the practice is often followed by good farmers, I believe it to be wrong, especially upon the light soil of the Cotswold hills. There is, however, a prevailing opinion that box feeding is not so healthy as the ordinary fattening stalls; so it is to be feared that this excellent

method of preparing natural manure cannot become so general as could be desired. Having given you my opinion upon wasteful management, I must endeavour to prove the most desirable method of preparing and preserving farmyard manure. This greatly depends upon the proper construction of the dung-heap and the condition of the materials of which it is composed, which materials no doubt most practical men know as well as myself. In heaping manure (unless intended for immediate use) the carts should always be drawn over it, and be constructed upon an inclined plane, on either side, so that horses could draw up on one side, and down on the other, as the more it is trodden down by horses and wheels by its being drawn up load upon load the better: it will rot quite rapidly enough when so compressed, and there will be very little loss by the dissipation of gases from over-heating, even if it should be required to remain for a long time; and once well turned about a fortnight before using will generally be sufficient to produce the proper consistency for ploughing in. Mr. Lawrence, of Cirencester, says of the plan which he has adopted—"Some three or more spots are selected according to the size of the farm, in convenient positions for access to the land under tillage, and by the side of the farm-roads. The sites fixed upon are then excavated about two feet under the surrounding surface. In the bottom there is laid some three or four inches of earth to absorb any moisture, and upon *this* the manure is emptied from the carts. This is evenly spread and well trodden as the heap is forming. As soon as this is about a foot above the ground level, to allow for sinking, the heap is gradually gathered in until it is completed in the form of an ordinary steep roof, slightly rounded at the top by the final treading. In the course of building this up about a bushel of salt to two cartloads of dung is sprinkled amongst it. The base laid out at any one time should not exceed that required by the manure ready for the completion of the heap as far as it goes; and within a day or two after such portion is built up, and it has settled into shape, a thin coat of earth in a moist state is plastered entirely over the surface. Under these circumstances decomposition does *not* take place in consequence of the exclusion of the air, or at any rate, it is to so limited an extent that the ammonia is absorbed by the earth; for there is not a trace of it perceptible about the heap, though when put together without such covering this is perceptible enough to leeward at a hundred yards' distance. The base may be ten to twelve feet wide, and the roof about nine feet from the base, which settles down to seven feet." I think, instead of three or four inches of mould laid in the bottom, Mr. Lawrence's plan might be improved upon by having a foot to fifteen inches; and a covering of ten to twelve inches over a level surface when the heap is about four feet high would answer the purpose quite as well as gathering in the top to form a roof, if the mass be well consolidated by the pressure of horses and carts. There is another kind of manuring that it may not be out of place shortly to allude to, which I have seen practised, with very good results, in some parts of the country, though not often adopted in this neighbourhood. I mean green-manuring, or ploughing in green crops, such as vetches, mustard, &c., of which *Morton's Cyclopaedia* says—"Vegetable substances in their green and succulent state are powerful fertilizers when thoroughly incorporated with the soil. A great portion of the bulk of green crops is obtained from atmospheric sources; and after a green crop is ploughed in, the soil necessarily contains more of the organic elements essential to vegetable nutrition than it did before that crop was grown; it is richer, in fact, by the carbon, oxygen, hydrogen, and nitrogen, which the green crop has obtained from sources independent of the soil. In like manner, the crop grown after a green crop has been ploughed in has the advantage of a regular supply of mineral elements, which have been worked up by the roots of the fertilizing crop from the soil and subsoil, and which in many instances, owing to their sparing solubility, are with difficulty obtained under ordinary circumstances." The value of green crops so applied is thus scientifically described, and I can bear practical testimony, upon ample experience, of its being most efficient. I should be very sorry for it to be inferred from any remarks that I have made that I wish to depreciate the importance of the use of artificial manures, especially guano, bones, blood, &c. But I am of opinion that a vast amount of rubbish is manufactured now-a-days. It may have the effect of exciting the soil to produce a crop of roots—though I have no faith in

it with regard to white-straw crops—and it may be an advantage for the time being. But the important question is, how long will land answer the whip to this treatment? We know that land will get sick of certain crops if repeated too frequently, and it strikes me rather forcibly that the time will come, and in some instances may have already arrived, of land being artificially manure sick; and I hope this evening to hear from those who have been using light manures for some years whether they do not find that a more liberal dressing is required now to produce the same result than when first applied. If so it is to be feared that the soil must be deteriorating rather than improving. I have alluded to artificial manures for the purpose only of proving the importance of paying greater attention to the preparation and preservation of that manufactured in farmyards and stalls, of which there is no danger of land ever getting sick. I will conclude by quoting, as nearly as my recollection serves me, the words of some one speaking upon the subject which I have introduced for this evening's discussion at an agricultural meeting in Ireland, and which came under my notice two or three years ago: "It is by the preparation and application of manure that good crops *can* and *will* be produced, and just in proportion as it is largely applied so will the farmer be enriched. If you want a large crop of turnips, prepare manure and apply it; if you want abundant crops of flax, prepare manure and apply it; if you want large potatoes, manure; if you want plenty of oats, manure; in a word, if you want plenty of money, I would say prepare manure *properly*, and apply it."

Mr. HOLBOROW, the Chairman, said they had been going on contentedly with our system of managing manures, but that he did not doubt they had yet much to learn in this as in other branches of their business. His practice, he said, was to make as good dung as possible through the winter. Some of his animals were fed on hay, and some on straw and cake. He often mixed the two manures together by putting them into one heap, which he hauled out on the ground, after his wheat crop had been taken off, into heaps of sixteen or twenty loads each, to be applied to the root crop in the following year. He did not consider he could get his green manure made into a suitable condition for the swede crop the same year; neither did he think there was so much loss by keeping dung as some people imagined, if the dung was only turned up into a good large heap. The plan Mr. Hayward had recommended of drawing the horses and carts over the dung-heap was practised on a farm he now held, when he was a boy; and although that system had been discontinued, he was at a loss to know why, as he believed it a means of preventing too much decomposition. Having plenty of straw, he kept his animals well littered; and therefore he did not think the loss from washing by rain was anything like so great as in many other instances. The many hints which Mr. Hayward had thrown out might be a source of much profit, if they could be practically adopted.

Mr. T. PRICE said he was not one of those large farmers who could put aside old dung, and have a store. He applied his manure to his roots for the same reason that he made it. His system was to have all his dung made from his horses and cattle in the same yard; and when a frost came, and he could do nothing else, he hauled it out, and threw it up loose in a heap; and, by having it once turned before using, he never found any difficulty in getting it in a fit state to produce a good crop of roots. He felt sure there was a very great loss from the washing of the rain on the manure which lay in the yards a long time.

Mr. GARN said he could speak from experience in regard to green and rotten dung when applied to grass land. Last season he manured one portion of a field with green dung out of the yards, and the other with rotten; and while by far the heaviest crop of hay was made from the former, the herbage of the latter was superior. This year he hoped the herbage of the portion manured with the green dung would be much improved.

It was unanimously resolved: "That it is of the greatest importance to pay more attention to the management of farmyard manure; and we fully agree with the system recommended by Mr. Hayward of managing it in such a way as not to produce decomposition long before using."

Votes of thanks to Mr. Hayward, and to Mr. D. Holborow for presiding, concluded the proceedings,

ABOUT HENS.

THE EXPERIENCE OF HEN-WIVES.

Only a few jottings of my own experience concerning them, and of the experience of sundry old women whose brains I have picked of their poultry-lore—nothing pretending to be a complete treatise on the subject, though I begin by going back to their origin.

Hens come from the Far East; but we do not know at what period they joined the great procession of civilisation that has been moving eastward round the world ever since man came upon it. They were probably brought to Tyre and Sidon by Phœnician mariners, and introduced by them afterwards into Europe. They may have come to Judæa in the fleet which once in three years brought gold and silver, ivory, apes, and peacocks to Solomon; but the historian of his glory has not recorded the arrival of the sober-suited birds, nor has the royal naturalist himself made any mention of their quaint ways, which might well have illustrated a proverb. There is nothing in the *Old Testament* which can certainly be said to refer to them; familiar to every one are the solemn, pathetic passages of the *New* which speak of the crowing of the cock, of the hen's maternal love.

The oriental origin of these birds is a fact of the more importance, that they cannot be said to be thoroughly acclimatised. No amount of care will make chickens do well with us in wet years; and though the old birds are not injuriously affected by moisture as the young, they thrive much better in dry, airy situations than they do upon damp soils, near water, or where trees or walls hinder free ventilation. Chaucer knew this well, when he made

—“A yerde enclosed all about

With stickes, and a drie ditch without,”

the dwelling of his cock Chaunteclere, whose “voice was merier than the mery organ,” truer to time “than is a clock or any abbey orloge” (sure signs these of a well-conditioned fowl), and who for his fine points might get the prize at a modern poultry show:

“His comb was redder than the fine corall,

Emballted as it were a castle-wall:

His bill was black, and as the jet it shone:

Like azure were his legs and his toen,

His nailes whiter than the lily-floure,

And like the burned gold was his colour.”

The comparison between the battlements of a castle and the cock's indented comb is perfect as comparison can be. But the game cock, before he was allowed to fight, was usually deprived of this ornament of valour, lest, hanging down torn and bleeding, it should blind him, it being the favourite point of attack for the beak and claws of his adversary. Thus trimmed, cocks were said to be “dubbed;” they were also, like ancient knights, girt with spurs of steel or silver. Sufficiently cruel, so might any one think that has ever seen them fight, are the blows that they give with their own weapons, using the wing as a mallet to drive the spur home.

Natural aristocrats game fowl are, excelling all others of their kind as much in elegance of form and beauty of plumage as in pride and courage. Their eggs and flesh are delicate in flavour. The hens are good layers and careful mothers, but it is seldom possible to rear more than half the chickens of a brood, they fight so fiercely, hens as well as cocks, when once they are feathered.

Very different from these are the big, gentle, helpless Cochins. Too stupid to care for rambling, too lazy to find their own food, they are just the birds to be happy in a poultry-yard. The hens are excellent layers; the chickens sturdy, long-legged, young ragamuffins with scarcely a feather to their backs. They are not, however, very valuable for early broods notwithstanding their extreme hardness, for they are slow in coming to maturity, and until they are fully grown it is impossible to cover their big, ill-shaped bones decently with meat; coarse sapless meat it is too.

Dorkings, on the other hand, have quite a talent for keeping themselves in condition, and they are so well shaped that a moderate amount of flesh makes them look plump and sightly. But Dorkings, living or dead, are the very pinks and patterns of poultry perfection. Their chickens, indeed, are not quite so hardy as the young Cochins, but with ordinary care there is no difficulty in rearing them, and their mothers bestow extraordinary care upon them; no hens are to be compared to them either for affectionateness or for cleverness.

Nothing can be more elegant than the Spanish hen's person, nothing in better taste than her costume: a rich black robe, reflecting in its glossiness every rainbow hue, white drapery about the small shapely head, high scarlet comb surmounting it, down to the dainty feet and legs—the donna all over; and her lord is as stately as she is graceful. Him I like rather better of the pair: one is as proud, as unsocial, as untamable as the other; but these are qualities that somehow become a hen's character worse than they do a cock's. Besides she is a bad mother. Her chickens, poor things, are rather delicate; indeed, the whole race seems deficient in vital force, a stock of Spanish fowl often without any apparent cause dwindling away and dying out. Their eggs are larger than those of any fowls, and they, as well as the flesh of the birds themselves, are of delicate flavour and of snowy whiteness.

It would not be easy to make a choice between the white-crested sable-tinted Polish fowls and those dressed out in cloth of silver or cloth of gold all twinkling with jet spangles. Very charming both kinds are, with their plump, compact persons, their gentle dispositions, and the brisk motions to which those big head-dresses of theirs give such an odd emphasis. It was, it will be remembered, these top-knotted fowls whose company was such a solace to the Italian girl in George Eliot's “Scenes of Clerical Life;” it is of them the author is speaking when she says that “in certain sorts of mental trouble more relief is found in looking into the ways of poultry than in listening to the songs of nightingales.”

I must pass over the Malays, the Brahma Pootras, the Hamburgs, the Bantams, the Crèvecoeurs—the description of their perfections and the story of their triumphs, are they not written in the shilling handbooks? here I have hardly space to touch upon them. But for a piece of advice about them I must find room. Give them as much liberty as possible; keep but one sort if you must have purity of breed, for then they may, by taking great pains, be made to do tolerably well in the separate compartments of a poultry yard; they can never be as healthy and vigorous as they would be if allowed to range at large. Hens of mixed race (not the old unimproved sort of fowls, but crosses between them and the new breeds) lay more eggs than do the blue-blooded feathered gentry that make a figure at poultry shows; their eggs produce more chickens, and their chickens are more easily reared. But of whatever sort of fowls a stock be composed, it is essential to its well-being that the individuals composing it are healthy, that they be chosen from spring broods of chickens, and that new blood (fowls not akin to the rest) be often introduced into it. A favourite will of course be kept till she drops off the perch from age and fat; but, as a matter of business, it is better to put hens away when they are three years old; after this, they seldom lay well—only for a little while in spring, when eggs are plentiful, and so of small value.

Gentleness cannot be too much recommended in the management of the poultry yard. A pet hen generally makes a good mother (the best I ever knew nestled in a doll's bed in the days of her chickenhood, and was fostered by a cat); but a wild timid one is perpetually making herself and her chickens miserable about something or other, besides often trampling them to death from mere fury and nervousness. And besides the profit that there is in making friends with them, there is a great deal of amusement. To know one turkey, goose, or duck is to know all; but hens, like other highly civilized races, manifest endless diversities of character. One is always get-

ting into tantrums, hysterics of fear, anger, maternal affection, or all three together. Another, though a good sort of body in the main, is such a manager, that there is no doing anything with her. She is so jealous of interference, that she will keep her chickens out in the rain rather than allow anyone but herself to put them up, and she will call them off from their dinner, if she be not allowed to scatter it on the ground, and manipulate it after her own fashion. The chickens of a third are always hungry, dragged, and cross; wherever she has been, a couple of lost ones may be heard crying after her; while her neighbour's family will be plump, clean, and merry in the most unfavourable circumstances. Some hens peck strange chickens to death; others steal them from their mothers and adopt them. One of this last kind I have known to take very kindly to a pair of nestling hawks that were half fledged before ever she saw them. When a hen wishes to sit she lies upon the nest, not rising when meddled with, but scolding vehemently, angry at the disturbance of her sweet maternal dream. This same peevishness of temper of hers is often taken advantage of when it is thought advisable to check the brooding inclination; a crib is provided wherein all such patients are confined together, and there they soon forget all softer wishes and fancies in striving to torment each other, and in longing to be rid of each other's company. A less cruel way is to feed them highly, which will induce laying. Sometimes a hen forsakes her eggs after sitting for a few days on them, so it is well, especially in early spring, to test her constancy by giving her at first a few of small value; food should also be left near, that wandering too far may not make her forget them. The hen's natural nest consists of a hollow rudely scratched in the ground under cover of weeds or shrubs, a few dry stalks of grass or dead leaves surrounding the eggs, not under them. The best artificial one is a box half full of earth, with a little well rubbed straw over it. She likes to sit where she has laid, but she is much better away from the other hens, she being made to sit any where by giving her the eggs at nightfall, when she has just light enough to see them and arrange them to her satisfaction before she goes to sleep. A wearisome task indeed is before the poor bird. Think of sitting still for three weeks without as much as a novel to read or a bit of knitting work to do, and then, perhaps, after all she is flung disregardfully off her nest that her chicks may be added to the brood of some hen that began to sit at the same time, for a large flock gives no more trouble than a small one to us, and they, though they cannot well cover more than twelve eggs a-piece, can rear twenty chickens a-piece, or more in warm weather, and when well supplied with food for them.

The hen, though she will hatch the eggs and bring up the young of other fowls, is not without her preferences. She is visibly discontented when they are smaller than her own, but they cannot be too big for her taste. Her delight in goose eggs and goslings is something to see. Every one knows that chickens must not be reckoned before they are hatched; now-a-days only a wise old woman here and there knows that it is most unlucky to count them after; that if the number of a flock be known, so surely will it be diminished. Is it not strange in how many forms that old superstition meets us? the belief, I mean, that the superior powers are envious of the prosperity of man. But it is hardly worth while to count chickens at first, such numbers of them are cut off by pip, inflammation of the throat that is, or gapes, as the disorder is called in its worst stage, when the bird's throat becomes full of strange double bodied worms. A very dreadful disease pip or gapes is to unfledged chickens especially; older ones it often attacks, but it seldom kills them after they are six weeks old. Of remedies for this disorder I could tell dozens; some surgical, such as the extraction of the worms with a little feather; some medicinal, such as the administration of a drop of turpentine; some utterly absurd, such as the removal of the little horny membrane which all chickens, sick and well, have at the tips of their tongues; all alike useless. Warmth, fresh air, nourishing food, cleanliness, these are the only things that I have ever known of the least service. For chickens with pip, for fowls that from any cause are out of order, there is no tonic at all to be compared to wheat; and they should from the first be trained to eat it, for it is still more admirable as a preventive of indisposition than as a cure. Grains of wheat, it is true, are rather unwholesome morsels for the tender beaks of baby chicks, but wonderfully soon they learn how to send them

down as grist to those hard worked little gizzards of theirs; once they can do this they prefer wheat to any food; too much of it makes them quarrelsome. Chickens sometimes get pip in dry weather, but cold and rain are sure to bring it on; above all, poor little early birds that they are, they get worms in their throats because their mother chicks them out of their warm beds as soon as there is light. Her instinct, admirable as it is, was intended to be used in a dry climate, and it cannot always be depended on in a damp one for the prudent management of her young. From rain she saves them well; calling them into shelter, and hiving them under her wings, regardless altogether of herself; and nothing makes a hen so uncomfortable as rain, but against dew, which is almost as hurtful to them, she is not on her guard. At nine of summer, at ten of spring and autumn mornings, is quite early enough for unfledged chickens to leave their dormitory; the hen will bring them back to it between three and four in the afternoon, but in damp cold weather they must not be left out so long.

Newly-hatched chicks should be fed with bread (by the way it is generally crumbled so finely that they can hardly pick it up). After they have learned to eat there is no better, no cheaper food for them than maize meal, either boiled into a stiff, rather dry mess (chickens hate tough clammy food), or else moistened with milk or water. At first they must be fed almost every hour of their working lives (their breakfast to be left with them over night); by degrees they are to be reduced to three meals a day, or to two, according to their opportunity of foraging for themselves. The hen is a snapper up of unconsidered trifles, and if she have good range she will eat fully half the food required by herself and her family. Upon heaps of rubbish she may be seen, in dry trenches, under plantations, scratching up corn, fir needles, small stones, and clods of earth; in search of worms, earwigs, beetles, mille pedes, and such small deer; many a good bit she picks up in the stable and cowhouse—many a grain of corn at the barn door and in the stackyard; she rambles a field in search of seeds, green-meat, and insects; and if she can get into the garden she is quite sure that the beds were dug and raked so trimly that she may the more easily turn them over. And the cock caters almost as assiduously for the hens as they do for the chickens; very hungry he must be when he eats anything of which he does not call them to take share. There is not much danger of these suffering from sameness of food, but poor jail birds, that can do nothing to supplement their rations, must have them varied. Carrots, turnips, lettuces, or cabbages, thrown whole into the poultry-yard, give a useful change of diet besides a great deal of amusement to its inhabitants. Meat should be given occasionally (they do not require prime joints, livers and lights will do), and the chickens should now and then get hard eggs chopped small, curds and milk. Winter chickens must always be supplied with animal food; because of the cold this is necessary, because there are few insects for them to eat, and above all because high living makes them soon fit for the table, which is the chief thing aimed at in the rearing of those very early broods.

On the banks of the lower Mississippi chickens live almost entirely on buffalo gnats, blood suckers more terrible even than the mosquitoes of these parts; from morning till night they are picking them off the cattle that crowd around the wood-smokes that are made to mitigate the pest, and this food—essence of meat in natural capsules—so stimulates their growth that at less than two months old they are eaten in their turn. Quite the best use it is too to make of over precocious bird; such are seldom either large enough or healthy enough to make it advisable to recruit from them the store flock.

Potatoes, when they are in season, may be the standing dish, boiled and mixed with meal, both for laying and fattening fowls. Other excellent articles of provision for them are grain of all sorts, including buckwheat, maize, and sunflower-seeds, oatmeal and maize-meal either raw or boiled, and boiled rice. They thrive better when supplied with grain and soft messes than they do upon either alone. Their feeding-troughs should have moveable lids, pointed and barred like the raftered roof of a house before the laths and slates are put on; they destroy more food than they eat when they are allowed to scatter it about and trample it under foot.

Chickens under three months old must not be coop-fed. For pullets it is not necessary at all; they are quiet, small-boned, and acquire flesh readily, but it is much the best way of preparing cocks for the table; and they must not have

much light, else instead of growing fat they will fight and crow even more incessantly than they did outside. Give them twice a day as much potatoes and meal as they can eat; let them have a little corn now and then; do not forget to supply them with gravel, without which their gizzards are like mills without millstones, and they will grow fat enough in all conscience, though certainly nothing produces such enormous fowls as the odious practice of cramming.

Hens, though haters of water, are great lovers of cleanliness, a heap of sand, of dust, of ashes, or a dry bank of crumbling clay, serves them for dressing-room and toilet apparatus. Of fine days they are sure to be found basking in such places—nestling and fidgeting in their bath of dust, and working themselves into it feet foremost, so as to force it under every feather. Then rising, they shake it smartly off, and adjust their ruffled plumage; and so again and again they go through the whole process, looking as solemnly self-satisfied all the while as so many Turks. By the way they, too, use sand for their daily purifications—but only in default of water.

Hens confined in a poultry yard must by all means be provided with a dusting-place. Another essential requisite for them is material for egg-shells—lime rubbish or chalk; for want of this they often peck the mortar out of their houses as far as they can reach all round. And, besides these real wants, hens have a fanciful one which it is well to bear in mind: they delight to lay in places that they are not accustomed to; and if they be not occasionally provided with new nests in their houses they will if at liberty lay abroad.

If air be excluded from newly laid eggs, which may be done by rubbing them over with oil or butter, or by dipping them for a moment in boiling water, they will retain their first milky freshness for a month. In a mixture of lime and water, of about the thickness of batter, they will keep for six months or more, fresh, but with a slight taste of lime. It must, however, be borne in mind that these and all other methods of preserving eggs destroy the principle of life that sleeps so mysteriously within.

The seeds of plants and the chrysalides of butterflies are the emblems of the resurrection with which we are most familiar; eggs were a more popular type of it than either, anciently; and still the custom of giving and receiving them at Easter lingers in remote corners of Great Britain and Ireland. In Russia it is in full force; there the humblest peasant, presenting to the highest lady in the land an Easter egg, with the salutation, "Christ is risen," received in return the kiss of peace, with the answer, "He is risen, indeed." Eating tansies at Easter was an old English fashion. They were a sort of omeleta, made of eggs and the herb tansy (*athanasia*), the immortal herb.

Tansies and Easter eggs are customs out of date, but the thought which they symbolised is one that may well come in to the mind of any one upon finding a nest, where yesterday were but eggs, discoloured and dead seeming, full of pure, lovely, bright-eyed creatures all joyous life.

POPULAR ERRORS CONNECTED WITH VETERINARY MEDICINE.

At a meeting of the Breconshire Chamber of Agriculture, Mr. FERRIS, veterinary surgeon, read the following paper:

These errors are connected both with the agriculturist and the owners of domestic animals generally. Your assistance is solicited to eradicate them, and to establish just and true principles in all their requirements. Just think for a moment of the vast quantity of valuable animals in the county, and which form a considerable portion of the county wealth. Think of the splendid herds of cattle, flocks of sheep, and horses—scarcely better to be found in any other part of the United Kingdom. The time is not very long since when there was not a single veterinary surgeon in the county—when the proprietors of those animals had no other aid, if disease attacked them, than the farrier or blacksmith, and to him alone was entrusted their care. These people, ignorant of all principles which should guide them, and many of them often half drunk, groped their way without the least shadow of knowledge, and, as a rule, did much more harm than good. I am convinced that it would be better for the owners of the soil, one and all, rather than trust them in the hands of such men, to let nature have her own way, and not to pervert her laws by cruelty and ignorance. The darker days of farriery were remarkable only for ignorance and cruelty. Then boiling lead was poured into the tissue of living animals for the cure of disease, and their bodies cut and hacked as if the poor creatures possessed no feeling. Then the remedies resorted to constituted a mass of incompatible substances, the one counteracting the effects of the other, and the whole forming a compound which might or might not, according to chance, prove of benefit, or be the means of assisting nature in the removal of disease, administered without the slightest idea whether they would do good or harm. The employers were often as ignorant as the employed, and could not have valued science had it been within their reach. During the last few years agriculture has perhaps made more rapid progress than it ever did before in a similar time. The progress of veterinary science has done much toward the amelioration and prevention of many diseases, which formerly devastated the property of the stock owners. The public have benefited largely by its advancement in the treatment and prevention of diseases, though at the pecuniary cost of the profession. The advancement is seen by comparing the diseases of the present day with those that were prevalent formerly. How seldom do we now see glanders, farcy, pole evil, fistulous affections, &c. They now appear seldom

because our increased knowledge enables us to fathom not only the nature but the cause of disease. We have now, as it were, suddenly emerged from the times of superstition and ignorance, and are expected to give a reason for all we do on true principles, and to ensure the proper medical care of our patients. Still, errors even in this period are committed, and of such grave magnitude that it has already cost, and will continue to cost, veterinary practitioners of the present day almost endless application to eradicate them. These errors are the more frequent because the long continuance of them has caused stock-owners to be confirmed that they are undoubtedly correct, when they are mere shadows and delusions—nay more, superstition, ignorance, and cruelty. I would have you this day consider some of these erroneous opinions, which I shall hereafter point out to you as such, to weigh and balance them in the scale of reason before you apply them. Professor Varnell, in alluding to the subject of veterinary surgery, says it is the preservation of the health of our horses, flocks, and herds, and when they are invaded by disease to bring to bear as much skill and attention as we possibly can, with a view to remove it: and in all our operations, or in any other treatment we may have occasion to resort to, we are bound to be as humane as possible, and not to put any creature to unnecessary pain; nor shall we allow in our presence or to our knowledge any animal to be mis-used or ill-treated. In this respect we may, with much consistency, consider ourselves the guardians of domestic animals. Now, if I neglect this opportunity to point out to you the follies and errors which are daily practised by ignorant men on our valuable animals, I certainly should abuse this trust. Can anyone think for a moment that the days of charms and charlatanism have not passed, and that this grave ignorance and superstition is still in operation? I feel persuaded that no one here expects a veterinary surgeon to charm away the disease of their patients, and yet such quackery and superstition appear not to be entirely eradicated by science even now. I am sorry that I have to invite you gentlemen, who attend here, who have regard for science, to use your influence to scorn such practices whenever an opportunity offers. The man that has his animal charmed with a view to remove disease must be extremely ignorant, and the person that practices such deception and dishonourable conduct is not worthy to treat animals, because he must know that disease will not listen to him. It is common to find such men charming a horse for something in the shoulder, and keeping the animal in torture for days, and even months, when

the foot has been the seat of injury, whereas if proper treatment had been resorted to at the beginning of the injury the animal might have been relieved almost immediately. From neglect of proper treatment the foot often becomes diseased to an immense degree, sinuses form in all directions, rendering the animal a cripple during his lifetime. This cruelty is frequently the effect of charming. However dazzlingly brilliant for a time may be the reign of false doctrine in veterinary science, or in any other science, the truth must come out, the mask fall, and the rotten building must crumble. Is it not a cruel operation to cut open the belly or abdomen of an animal supposed by the ignorant to have twist or gut-tie, when no such thing exists, thereby rendering the life of the animal in jeopardy? Not long since I was called upon to go some four miles to operate on a bullock which had the twist or gut-tie, and bring such instruments as were required for the operation. On my arrival I found that I was only second, as the owner had sent for an old practised hand, who was sure it existed, and declared that he had operated on scores in the manner mentioned above. I told him if he had operated on scores the same he had tortured the poor dumb creatures enough, and that it would be wisdom on his part not to do so any more, and a very great saving to the owners, because the supposed disease rarely existed in cattle. In this case the bullock was suffering from mere constipation, and treated by me accordingly, and in a few days after the little animal quite recovered, without having his belly cut through, and his intestines roughly handled. Is it not unwise thus to treat animals in an economical point of view in performing such unnecessary operations which frequently destroy the life of the animal? Ought it to be legitimate for the ignorant pretender to cut and hack the poor creatures in such a manner, and is it not wrong for no one to take their part? These tortures have never been turned to any other account than that of provoking unexpected manifestations, which serve to build up artificial theories, only made to be overthrown by the experience of judicious practitioners; and they are repulsive to all feelings of humanity, Christianity, and civilisation. Another error is cutting the tail of cattle supposed to be diseased, which supposed disease is known by various names, such as tail alip, tail ill, notch in tail, &c. It is thought to consist in a softening of the substance of the tail some few inches from the end downwards, which can be easily doubled back upon itself; also, that at the place where it is capable of being doubled it has a soft relaxed or elastic kind of feel. Now, this imaginary diseased state is a natural condition in the tail of cattle; but when an animal is weak or suffering from almost any debilitating disease, this softening is more perceptible; hence it has led many to believe that it is the tail which is diseased, when in reality it is only a symptom of sickness. This injurious and cruel operation is performed by making a longitudinal incision into the substance of this soft part of the tail, and then filling it up with some irritating nostrum. Many a poor cow, even while suffering from some real constitutional disease, has been subjected to this torturing operation, and thereby has got added to her other complaints a foul, sloughy, carious sore, frequently causing a portion of the tail to rot off. Another error is cutting or burning out the lampas and flaps, as they are called, in young horses, in which the front teeth, as a rule, are short, and, in consequence, the palate prominent. When they evince a loss of appetite in addition to this appearance, they are said to have the lampas, and if a sensible practitioner refuse to cut or burn them, the horse is taken to a farrier or blacksmith, who is ready with his hot iron to perform this useless and cruel operation. Flaps are supposed to be on horses, and more (especially pigs that do not feed well. An absurd and cruel operation is performed by cutting out some of the loose tissue that connects the lips to the jaw. Whoever will thus treat animals ought to be severely punished. I may here observe the error of amputating animals' tails. Nicking, fortunately, is almost forgotten, and it would be well if docking were so too. I think it might be stopped if agricultural societies would not award prizes to any animal that has been mutilated. It is said that the cropping of dogs' ears and tails is vivisection with a vengeance, and ought to be taken notice of by the Society for the Prevention of Cruelty to Animals. But think of the poor horse, how many a one has suffered torture for days with that formidable disease lock-jaw or tetanus, caused chiefly by docking. Many have died from its effects, others have been less severely injured,

and have a partial contraction of some of the muscles of the quarters, and have lost that beautiful bending action, and drag their legs throughout life as a consequence. The French vivisection, cruel though it be, is scarcely more so than the daily mutilations which take place in our town and neighbourhood; yet the London Society for the Prevention of Cruelty to Animals sent a committee to have an interview with the Emperor of the French some few years ago to complain of such practices. Would it not be well if the society put an end to vivisection in our own country first? I will now give you a few of my reasons for considering the docking of sheep an act of cruelty. When any portion of an animal is amputated the cold always affects that part sooner than any other. If, therefore, you cut off a sheep's tail, you not only deprive it of a natural protection, but you also make the unguarded part tender as well, so tender that when this operation has been performed in cold weather animals have often died in consequence. Again, by seeing a sheep's tail it is often much easier to tell its breed—a fact which has hitherto often been overlooked, even by large stockowners, and I think it will be admitted by any impartial man that an animal with this appendage has a much more pleasing appearance than one without. Surely no gentleman will be bold enough to assert that he can improve upon Nature by mutilating it. Who would think it an improvement to his appearance to have his nose or hand cut off. Many farmers have told me that after docking sheep always grow bigger. If this is true, I can only say that the increase in size takes place the very moment they have lost their tails. The fact is that the increase is only apparent, which is owing to the eye being entirely taken up by the sheep instead of, as before, its attention being claimed by a woolly tail as well. I have been told too, that docking is advisable for reasons of cleanliness, the tail being apt to be covered with excrement. This, though seemingly a more reasonable reason than the last, will not stand criticism, for unless the sheep has diarrhoea its tail will not get dirty, and when it has this affection it is quite as effectual to cut off a portion of the wool as to cut off the tail itself. A very serious error is that of riding and driving a horse about hurriedly when suffering from an attack of colic, or gripes, and inflammation of the bowels. There is a fixed opinion that this is the best remedy for the disease, whereas, though occasionally it effects a cure, in nine times out of ten it causes the death of the animal. The following is the reason: When the functions of digestion are arrested from distention of food and gas, the belly becomes tympanitic, and the subject consequently exhausted. If at this time it is violently exercised, of course the exhaustion is increased, and at one time we have rupture of the stomach or intestines, and then death; at another, the minute blood-vessels giving way, and an immense exudation of dark, jelly-like blood taking place, which covers the mucous surface of the intestines, the end is equally fatal. In this case, we have been speaking of a horse suffering from a combination of colic and enteritis. When the disease is simply one of colic, I admit that the treatment just condemned is often successful, though attended by considerable risk, and very brutal. Lastly, I may observe the errors of periodical bleeding and physicking, which, however, are not so common as formerly. The continual giving of diuretic balls and powders is very erroneous, because such medicines weaken the animal, and more than that, they not unfrequently bring on disease. A horse or other animal in good health requires no medicine of any kind, and all balls, or powders, whether condition, alternative, cordial, or any other sort, are to be condemned, as they only tend to fill the pocket of the apothecary, and destroy the health of the animal that receives them. Although not an advocate for giving medicine when in health, when disease occurs the case is quite different, for it becomes our chief means in assisting nature to bring about a restoration to health; and when it has been applied early and judiciously, it has been the salvation of many animals. Those who use medicine for the cure of disease must have a thorough knowledge of the action and use of such medicine before it can be applied judiciously, and also a knowledge of the complaint for which it is used, otherwise they are groping their way in utter darkness, and their medicine becomes reduced to a mere lottery and empiricism. From a want of this knowledge, many an animal has been lost: hence to gain it is one great object of our science. Many of the modern discoveries made, and the doctrines promulgated, are worthy of admiration, in the setting

aside as erroneous opinion once firmly maintained to be right, and the explanation of the phenomenon of health and disease. Before concluding, I wish to say a few words on a subject which was introduced by Mr. D. Downes at the last meeting. I allude to the scab in sheep. It is really an extraordinary thing that some farmers will not look after their own interest, but from sheer laziness are contented to suffer the value of these animals to be lessened to an almost inconceivable extent by so loathsome a disease. This affection is one of the most contagious to which the sheep is liable; so much so, that one scabbed sheep is sufficient to affect the whole county. No punishment can therefore be too severe for a man who allows such an animal to stray; yet I constantly see sheep about the roads one mass of scab, helping to spread over the neighbourhood a disease which, by proper care, might be wholly exterminated.

The CHAIRMAN said with all due deference to Mr. Ferris and to his skill as a veterinary surgeon, he still thought there was yet much to be learnt with regard to the diseases of animals and the way of curing them. It was a humiliating thought that when such a disease as the cattle plague came into the land, with the knowledge before us that it had re-appeared from time to time, yet the only remedy for the evil—if remedy it could be called—was what was termed “stamping it out,” which was simply a euphuistic phrase for wholesale slaughter. So far back as the early times of the Roman empire the poet Virgil described this very cattle disease, and recorded that the only remedy was to slaughter all the herds that were infected with it. He had seen it stated that the diseases of pigs were manifold, and the remedy very uncertain; and we were told to make bacon of them at once or give them medicine. Now he thought that those who possessed animals were greatly to blame; for he did not consider that sufficient attention had been given to this important question. They had not, in his opinion, given the encouragement to science which they ought to. It was incumbent upon them to do a great deal more in the way of encouraging men like Mr. Ferris, who was actually the only veterinary surgeon for miles round. That gentleman in his paper had alluded to blacksmiths’ doctoring. He (the Chairman) could never understand why because a man happened to be a blacksmith, he should be endowed with the power of curing diseases, or why he should be invested with the robe of *Æsculapius*. He should never forget the utter horror he felt on one occasion when he saw an attempt by an unskilful practitioner of the art of dentistry to extract a tooth. He placed the patient’s head between his knees, and tugged away until he succeeded in pulling out a portion of the jaw and two or three teeth with it. If they would employ ignorant men, they must naturally expect to be imposed upon; and in fact it was not the fault of these people that they should do so. For instance, there was a class called bone-setters who were still believed in; and not only were people credulous enough to believe in blacksmiths’ doctoring, but even the children of such persons were to be found practising their so-called curative art. They ought seriously to take this matter into consideration. The population was rapidly increasing, and in the progress of years we had found artificial means of augmenting the crops and produce of the soil, and we ought in the same degree to look to the better care and treatment of our flocks and herds, and do our best to find the means of preserving those animals which God had entrusted to our care; for to men this was quite of as much importance as it was to raise good crops of corn and good crops of hay. He had no wish to be too hard on the blacksmiths, for there were very many good ones; but he did contend that it was most unwise to leave the treatment of cattle to unskilled and ignorant men instead of encouraging science. The demand would create the supply, and if they valued more highly the medical skill of those who were properly taught and took an interest in the development of science, we should get more knowledge a great deal than we possess now, for it could only be learned by searching for, and finding it out; and among other things that would result from this knowledge, would be the discovery that blacksmiths were not able to save life. There was no better sign of the growing interest of farmers in this kingdom than the discussion of such topics at assemblies like the present, which were held in every county throughout the land, and surely there was no subject that more required their careful consideration than the best means

of preserving and improving the food of the people. It behoved them therefore to press this great subject forward upon the attention of those who were chiefly interested. But he thought Mr. Ferris would agree with him that the subject was still in its infancy. Look, again, at the simple fact of there being only one such man as Mr. Ferris in an enormous district where there were thousands of persons and animals around. He quite believed that had there been more men of this class, and a greater knowledge of the treatment of the disease, the scab in sheep might have been stopped at the beginning. In conclusion, he would only reiterate his hope that the matter would be dealt with in earnest.

Mr. SMITH remarked that it was mostly the poor sheep that were attacked with the scab; the fat ones very rarely caught the disease. He believed that many of the sheep so attacked might be cured if only the proper remedies were resorted to in time. He thought that sometimes it was as well to kill or “stamp” them out; for it was a shocking disease, and one scabby sheep would affect a whole flock.

Mr. FERRIS, in answer to a question with regard to cutting off sheep’s tails, said he did not approve of the practice, which he considered to be cruel as well as unnecessary. The tails of animals were never intended to be cut off. As to the scab, if fat sheep took it they became poor; and poor sheep were more liable to it than fat ones; and the disease being highly contagious, a whole flock would soon become infected.

Mr. BENDALL said that during twenty-two years he had lost from one to three per cent. of his sheep through cutting their tails off. The disadvantage resulting from this practice was considerable.

Mr. WILLIAMS thought it was the last speaker’s own fault; the proper plan was, when the tails were cut off to tie a piece of string round the end of them.

Mr. REES WILLIAMS believed that he should have lost many of his sheep if he had not cut their tails off.

The CHAIRMAN inquired what was the best time for cutting the tails.

Mr. SMITH: The sooner the better.

The CHAIRMAN said it appeared a logical conclusion that if a farmer lost a certain number of his sheep by cutting their tails it would be better not to cut them.

Mr. CORNISH said he had not lost a sheep by doing so. Did Mr. Ferris, he would ask, advocate animals being altogether left alone in this respect? It was generally understood by men of wide experience to be the best plan. He knew that in Somersetshire, for instance, they always cut off the tails; and he had never heard until to-day that lambs were lost in consequence. All his were cut, and he never lost any.

Mr. HANDLEY could fully bear out Mr. Cornish in what he had just said, for he had never lost any; and he apprehended that when they were lost it was in consequence of the tails being cut late.

Mr. FERRIS was of opinion that the practice of cutting the tails off sheep did not improve, but rather deteriorated, the stock. His desire was to improve the breed, and he could see no advantage in this habit.

Mr. THOMAS WILLIAMS observed that there was a difference between cutting the tails too short and cutting them too long.

Mr. DAVID WILLIAMS supposed it would not do to cut the tails of lambs in frosty weather.

Mr. CORNISH remarked that as Mr. Ferris had never been a shepherd it was to be presumed he could not understand the management of sheep; and as to the question put by the last speaker, he could only say that no man in his senses would ever attempt to cut the tails off lambs in frosty weather.

Mr. FERRIS replied that he had been brought up with sheep all his life, and his father was a farmer.

Mr. DOWNES believed that more young lambs died from congestion of the lungs than any other cause.

Mr. FERRIS knew that very well; but they were still more likely to die from that cause if their tails were cut.

Mr. CORNISH said in Scotland they never cut the tails off the highland sheep; and the long-tailed sheep of the mountain breed were very prolific.

The CHAIRMAN said whether they were agreed or not as to the desirability of this practice, he was sure they were all very much obliged to Mr. Ferris for the interesting and able paper which he had read to the meeting.

QUARTER-ILL IN CATTLE.

At a meeting of the Newcastle Farmers' Club, Mr. HENDERSON, of White Lea, read the following paper: I make no pretension to veterinary-surgery, but I have saved a great number of young cattle attacked by the quarter ill, and some of them in the last stage of the disease. The prevention and cure of this disease are so simple, that any intelligent and active person can easily carry out the instructions I have to offer in this matter, and my experience warrants me in saying that if these instructions are carefully attended to, they will be very seldom unsuccessful. But, first of all, I must endeavour to explain the nature of the stomach. The first stomach is the great belly, which receives the food after it has been slightly chewed. The second is called the honey-comb, and is so closely connected with the other that it may be said to be a part of it. I have had several young cattle that have died of the quarter ill, and the last three that died I opened. In the first case, there were, before death, no symptoms of wind contracted in the bag; it was hard to the touch, as if over full, and when I opened the stomach I found the first stomach so tightly wedged that there was no room to get my finger between the membrane and the unchewed food; and in the strait or narrow passage between the first and second stomachs, the food was so dry and hard that I could crumble it into dust between my fingers. When skinned there was not much discolouration in the hind-quarters; the reason of that is, that it had not commenced to fill with wind, or it had got the wind passed; but about the neck and shoulders there was a complete gore of black blood. The other two were in a different state before they died: they were swollen in the bag to a large size, and the hips were hoven up and in a crackly state when touched with the fingers. After death I opened them, and found them the same as the other, with full stomach, and pressed tightly against the artery and lungs. And when skinned, between the skin and flesh, all over the body was in a state of gore and frothy blood. This frothy blood is the blood and wind working together beneath the skin, and that is the cause of the crackling you find in the hips. I need not tell a farmer what will overload a beast's stomach. Young cattle will take it at any season of the year, and it depends greatly upon the farmer himself how he feeds and looks after his cattle. It is four years since I discovered the cause of this disease, and although there may be many farmers who know this cause as well as I, yet there are some who do not, and to such I cheerfully offer the results of my experience. Many persons think that this disease is infectious, but after I was satisfied of the cause of death in the worst of the three cases before-mentioned, I laid the carcase in the field, where all the young beasts were going and smelling at it every day, until the dogs picked its bones, and none of the cattle took the infection. When you ask a farrier what is the cause of the quarter ill, he will say it is a stagnation of the blood; but he does not tell you what it is that stagnates the blood; and any one knows that when a beast is found in the state above described, there is then no time to get a doctor, for the beast may be dead before he arrives. I need not say anything more as to what will stop the action in a beast's stomach, for any sort of dry food will do so when the animal does not get water sufficient along with it. The great injury is done when the stomach being full of dry food, the beast takes too much water upon it after fermentation has commenced. When you find your beast in the state already described—that is, when it looks dull, sticks out its head, moves stiffly, is afraid to turn round, and is swollen—you may be sure, from these symptoms, that there is something wrong in the stomach. Suppose it is not swelled, the first thing for you to do is to give a plentiful supply of oil, not over large a hornful at a time. You may give as much as a quart before it will dissolve the contents of the stomach, and then, immediately after the oil, give to a large beast $\frac{1}{2}$ lb. salts, 2oz. salts of tartar, and rub the chest and neck with mustard and turpentine, or the receipt No. 1 lotion. When the beast is swollen, the first thing to be done, before you begin to tease it with putting the drink into it, is to stick it in the bag, the same as you would stick a cow when she has a turnip in her throat—that is, half-way between the huck and

rib, and about three inches below the loin; then give the medicine above mentioned. When I find that the salts of tartar do not take the wind down quick enough, I give the following: 1 pint of water, then 1 drop sulphuric acid into the water till it becomes of the acidity of vinegar—say, twenty or thirty drops; then I put it into the horn or bottle, and when ready to put it into the beast's mouth, add $\frac{1}{2}$ oz. volatile salt powdered, or spirit of sal ammoniac, and give immediately whilst effervescing, and rub all the quarters with turpentine and mustard, or the lotion No. 1. About five days after, if the beast is stiff and sore, use the mustard again, or No. 1 lotion; keep the animal warm, and give linseed jelly, adding to every quart about a teaspoonful of gentian, root powder. Afterwards, if the beast seems to be dry in the skin, rub it along the back with Galipoli oil. This oil is also a perfect cure for lice on cattle. Some may say they have had a beast that died of quarter ill, and it did not ail anything in the stomach; they will say that it started in the leg or some other part of the body. It is very natural for them to think so, because they have never observed it in the first stage of the disease. Some, indeed, think very lightly of a beast standing swelled; they think it is over-full—it will soon go off. Perhaps it may go off; but in the meantime the heavy pressure on the artery forces a superfluity of blood beneath the skin—in fact, it goes all over the body and congeals in the weakest parts, and if allowed to remain in that state for a few days mortification sets in. As soon as this is discovered, use the remedies described; but if you find the beast lame and sore to the touch, put setons in the hips and chest. The common packing-needle threaded with a woollen cord will answer the purpose. Run it through under the skin; tie the cord into a loop, and wash it every day with turpentine or any stimulant, and rub well along the back with blister No. 1 or mustard lotion, and keep the beast well wrapped up. I append a few useful receipts, the ingredients for which every farmer should constantly have by him: Receipt No. 1.—To make black oil or sweating lotion: $\frac{1}{2}$ pint of linseed oil, 1 gill of turpentine, 2oz. sulphuric acid, to be dropped in till it boils; add the turpentine and oil together, then drop in cautiously the acid; mix in a strong vessel, as it boils very violently. No. 2 is adapted for any swelling or to rub on corns, udders, or any sprains: $\frac{1}{2}$ pint of spirit of wine, $\frac{1}{2}$ pint of vinegar, 2oz. of oil of regnum, 2oz. of crude ammonia or spirit of ammonia; dissolve the ammonia in a gill of warm water, then add the whole together in a bottle, and keep tightly corked. No. 3.—Ointment for foot-rot in sheep or hie in the foot: 3 oz. of tar, 3 oz. of lard, 1 oz. of bees' wax; melt them together, and, when nearly cool, add two grains of corrosive sublimate. No. 4.—To make green ointment, or what is commonly called "Stobart's Ointment": 3 oz. of sweet butter without salt, or lard; 2 oz. bees' wax, 2 oz. Venice turpentine, $\frac{1}{2}$ oz. red nitrated quicksilver, 1 oz. verdigris; stir in the two last when the other is melted and nearly cold. If over stiff, add more butter or sweet oil, or if too thin add more wax, and melt them over again. No. 5.—A drink for scouring in either calves or sheep, or for the flux in any animal: $\frac{1}{2}$ lb. of tormental root boiled in a quart of water, or, if tormental cannot be had, the inner rind of oak bark, 2 lb. to a quart of water (tormental if it can be had), and add the following: 1 oz. of Armenian bole, 1 oz. of magnesia, 1 oz. of rhubarb in powder. If the calf is very weak give a teaspoonful of black oil, No. 1, twice-a-day for a day or two, and if the above mixture stop the purging too quickly, give castor oil as required.

The CHAIRMAN said many gentlemen would have experienced this disease in their cattle. He had seen many instances himself; and it was always considered most doubtful whether the animal attacked could be recovered or not. The general opinion was that the disease arose in the stomach from too suddenly giving rich food after having been kept in a poor condition for some time previously, and was more of the nature of inflammatory fever as it arose up to the stage in which Mr. Henderson described it. Sometimes he had seen his neighbours remove their cattle likely to be affected from a rich field of clover, for instance, where they were likely to

get too much rich food, into a bare pasture, which had a very good effect in reducing the surplus of food which they had had. As Mr. Henderson said, the disease seemed to begin in the stomach: the quarter seemed only the seat of the disease, and the real seat was probably in the stomach. What sort of oil did Mr. Henderson give them?

Mr. HENDERSON: Any sort of oil. The case last Friday was brought on by a young beast eating very much heavy dry turnip tops. Mr. Reid sent for him. The beast was swollen most fearfully, and rubbing it along the back sounded like paper crackling, and also down its hips. The air and the blood were working together under the skin and flesh; that was where the quarter ill was. If you got the stomach clear and the frothy blood away, that was all you wanted.

Mr. ARMSTRONG had seldom heard of any beast being cured.

Mr. HENDERSON: I have cured seventeen decided cases.

Mr. ARMSTRONG: I am very glad to hear it. It will be the most useful thing we have had for a long time.

Mr. JACOB WILSON: What proportion of patients have been cured?

Mr. HENDERSON: I have cured every animal yet. I have not lost one. I will tell you of one case. I lost a beast for two days. It was a long way advanced in the disease. It was lost in the wood, and it had got home probably with the other beasts, and was lying at the outside when I found it. The whites of its eyes were turned up, and it was blown so full that it could not move one way or another. It was blown in the hips, and when I cut it in the hip with the needle there was nothing but black blood came out. He worked all night with it; but it was worth £5. He would not like to say he could cure another so far advanced; but no farmer needed to let his cattle get that far if he watched them properly. If he saw them every day he could cure them by the instructions in that paper, and then by stimulants. He considered that common sal ammoniac was quite sufficient to carry off gangrene. It was only in the skin, not in the flesh.

Mr. ARMSTRONG: It would generally seem to affect the flesh.

Mr. LITTLE (Vigo House): It is generally confined to young cattle; but if the reason assigned by the reader of the paper be a correct one, cattle at all stages of their existence will be liable to take it.

The CHAIRMAN: Occasionally they do.

Mr. LITTLE: Very seldom.

Mr. HENDERSON: I have had beasts from a month old.

A MEMBER: I had one three years old, which died of it.

Mr. HENDERSON: They are very exceptional cases.

Mr. JACOB WILSON said he had gone there that afternoon rather by accident, and simply as a listener, and one who wished to gain some instruction, which necessarily would fall from a paper of that importance. He must say that the matter contained on that paper was of considerable value to the agriculturist generally, although he should be rather prepared to express his doubt as to proving a panacea for all the evils represented in it. It was a question which he had personally given some attention to, because in his young and aspiring days—(laughter)—rather imagining that one could go before the common times, he thought he could cure this disease, and he had a try at it. He took a young bullock, eighteen months old, which was about the usual age at which the disease might be said to make its attack—from 12 to 18 months. There was no doubt he took the animal at a stage when the symptoms were the most marked, and, perhaps, in the most chronic stage, that was, when the quarter itself gave way. Like the gentleman who read the paper, he sat up all night also (laughter). He used remedies in the shape of hot fomentations, and he actually succeeded in driving the disease from that quarter; but it was simply to drive it to another. There was no doubt that, although the direct symptoms of the disease lay in a local part, and exhibited themselves to the eye in some quarter of the animal, yet the seat of the disease was the stomach. He perfectly agreed with Mr. Henderson on that point; but as to the cause, he thought they would generally notice that the disease occurred either in the autumn or the spring, most frequently, probably, in a clover fog, slightly frosted, or perhaps in the case of young cattle grazing out on turnip tops. But he thought, with all due deference to the gentleman who had introduced the subject so ably, that the experience of this country would go to teach us that it was

not a disease which was usually cured (Hear, hear). He quite admitted that there was a possibility in everything. There was a possibility that the information contained in that paper, which possibly up to the present time had been withheld from the public, might hereafter furnish receipts which might be of advantage to the farmers of this country, and might prove a panacea for the disease. He had his own doubts upon that point; but he believed that most practical men would tell them that they might take for dead any animal attacked with the disease.

Mr. HENDERSON: Well, you have the prevention there.

Mr. WILSON thought that a very great deal of the importance of cattle management upon improved systems would also furnish them with the means of preventing this disease. He believed that no better general principle could be observed than the use of something which kept the stomach in a uniform way; he referred to a healthy good oilcake, or linseed, which kept the stomach uniform and not constipated. He made these remarks simply to encourage discussion, in which he was glad to lend a helping hand. He simply said that in this particular case prevention was better than cure.

Mr. HENDERSON: You are left at liberty to think whether this is a prevention or not. I know I have not lost one since I used it.

Mr. WILSON added that he took this precaution every autumn or spring to physic all his young animals, and to seton them all.

The CHAIRMAN: I was not aware of that.

Mr. WILSON: The seton is a precaution; if they happen to get ill with wind below the skin they may get vent there.

The CHAIRMAN: Do you apprehend that particular districts are liable to it?

Mr. WILSON: It looks very like it.

The CHAIRMAN: Is it epidemic or infectious?

Mr. WILSON: I think not either. It is very much confined to districts, and probably to districts which may attract a large amount of moisture, and, therefore, a large amount of hoar frost.

Mr. HENDERSON: In dry seasons I have had most quarter ill.

Mr. WILSON: There is always most moisture in the atmosphere in a dry season.

Mr. HENDERSON: A dry season overloads the stomach.

Mr. WEEKS (Ryton) said he had lost several cattle by quarter ill, but it was always in the spring—never in the autumn. He had two farms within 300 yards of each other, and the disease was on one and not on another. Last year he put setons, and they died.

Mr. HENDERSON: How did you feed them? Perhaps in one place on straw, and in the other a plentiful supply of turnips?

Mr. WEEKS: There may be something in that.

Mr. HENDERSON: If the beasts get a plentiful supply of turnips, they never would have quarter ill.

Mr. WEEKS: At one place we have; there may be something in the field.

The CHAIRMAN: What do you attribute it to?

Mr. WEEKS: Whenever I hear of one of the young beasts being ill, I have always considered it a dead animal, and it has always proved so.

The CHAIRMAN: I hope a brighter day is coming.

Mr. JOHN ROBINSON (New Town Hall) said he was not very much experienced in agriculture, but he should state his experience. The farm which he had now was before in the possession of a person who was in the habit of turning his cattle into the fields in the spring to roam about. They very often got starved, and suffered very much from the cold atmosphere. He had several died from it, and he (Mr. R.) told him that it was from letting them go out too much into the cold: being so young, they could not stand it, and should be kept in the folds. He adopted the advice, and had not near so many casualties. He (Mr. R.) had now had the place for two years; he had had as many as 100 young cattle, and he had been very particular in keeping them warm, and in feeding them well; and they had never had a single case of quarter ill.

Mr. HENDERSON: Keeping them properly fed is a great point.

Mr. ARMSTRONG: But curing them after they have the disease is a greater point. Prevention is better than cure.

Mr. HENDERSON: There is only a road breadth between me and Mr. Weatherspoon, and there they have them dying continually. He has had 14 died in two or three years. He has fed with nothing but straw and hedge backs. Nothing but dry food causes quarter ill. It accumulates in the stomach, and the beast will not drink water.

Mr. LITTLE (Vigo House) thought local formation had something to do with it. On the old red sandstone he had never lost one, whereas a tenant going to a place where there was free sandstone lost some every year. He had also observed that down one side of a river's bank cattle were never affected with it; while on the other it frequently happened.

He referred to the river Till. He could also endorse the sentiment of Mr. Wilson that prevention was better than cure. With all deference to the person who had read the excellent paper, the great cause was that young cattle got a check in their progress, and then afterwards made blood too fast when they got on to improve more rapidly.

Mr. BELL (Cramlington) moved, and Mr. ARMSTRONG seconded a vote of thanks to Mr. Henderson for his paper, and it was carried unanimously.

On the motion of Mr. WEEKS, it was resolved that the paper be printed and circulated among the members; and a vote of thanks to the chairman concluded the meeting.

AGRICULTURAL CUSTOMS.

At a general meeting of the Midland Farmers' Club, held in Birmingham, Mr. W. FOWLER said: "Customs of the country," in the ordinary acceptance of the term, by which is understood that traditional custom which must regulate the mode of quitting a farm when no written agreement exists to the contrary, might safely be pronounced a delusion and a snare. It resembled an *ignis fatuus*, which, when we almost seemed to grasp it, suddenly disappeared, and left us floundering in doubt and darkness. Not only does the custom itself vary, in the most perplexing manner, as between one county and another; but even adjacent parishes, and sometimes even private estates have customs of their own, all more or less obscure, known only to few, and to them imperfectly, always more or less involved in doubt, depending upon endless collateral circumstances, and always modified and governed by the one invariable custom, that in the absence of an agreement to the contrary a tenant is entitled to quit on the same principle as that upon which he entered. Even this one well-known principle, though universally admitted, and recognized in courts of law and elsewhere, is constantly misunderstood and misapplied. It is a very common mistake to suppose that, assuming a man may leave as he enters, after having occupied a farm for a long series of years, during which time, if he is only a very ordinarily decent tenant, he cannot fail to have got his farm into a good state of cultivation, however wretched may have been its condition when he entered, he is nevertheless justified, in the last years of his tenancy, in as far as possible reducing everything to the same state of desolation as that in which it may have been left by the previous tenant. He apprehended that this universally recognized principle would bear no such unreasonable construction. He understood it to mean simply this: that if a man enters upon his farm at Lady-day, at Lady-day he shall leave it; that if when he entered the previous tenant took the whole or any given proportion of the wheat crop, on the same terms shall he quit; that if the hay and straw were taken to by him at a consuming price, so he shall leave them for the in-coming tenant; that if at the commencement of his tenancy he was permitted to enter, say at Candlemas-day, to plough and sow the spring crops, so shall he grant the same privilege to the in-coming tenant, and so on in regard to other similar matters. But to suppose that, because the previous tenant left the land foul, and the whole farm in a desolate condition, a tenant would be justified, after years of occupation, in quitting the farm under precisely similar circumstances, was utterly unreasonable. There was, moreover, this further difficulty—that nineteen times out of twenty, after a moderately long occupation, no living man, except the tenant himself, knows the circumstances under which the tenancy commenced. Even the time of entry upon the farm—a most important circumstance, in the absence of a written agreement—is frequently a matter of doubt; and the out-going tenant is often in a position to set up almost any kind of claim that his conscience will allow him to make. These difficulties might all be obviated by the simple expedient of having a written agreement which shall specify the time of entry, the amount of rent, and the terms on which the tenancy shall be terminated; and these were, in his opinion, almost the only real uses of an agreement. No covenants on earth, however stringent, would make a man farm well; but if an agreement were carefully drawn, it would at least prevent

the possibility of any serious dispute at the termination of the tenancy. The custom of relying upon the "custom of the country," instead of a written agreement was, in his opinion, "a custom more honoured in the breach than the observance." Having said so much upon the general aspect of the question, he proceeded to the local customs prevailing in the immediate neighbourhood. On the Staffordshire side of Birmingham what was generally known as the "Staffordshire custom" almost universally prevailed—that was to say, the tenancies nearly all terminate at Lady-day; the out-going tenant taking away two-thirds of the fallow wheat and one-third of the turf wheat, and being paid for cloverseeds, winter ploughing, carting, and spreading manures, pleaching hedges, &c., and also the consuming value of any hay, straw, or roots which may be left on the premises. This was, upon the whole, a convenient and equitable mode of quitting, and it was one that he introduced wherever the opportunity occurred; and where it was combined with a written agreement which required the out-going wheat crop to be taken at a valuation, and paid for by the in-coming tenant, it appeared to him to be almost entirely free from objection. He could not approve of any agreement or custom which did not give to the in-coming tenant the absolute and sole occupation of the farm from the day on which his tenancy commenced. Where this arrangement did not exist, difficulties and disputes were liable to occur. When the out-going wheat crop is not purchased by the in-coming tenant, the out-going tenant must reap the whole crop, and then the stocks of corn must be divided in the relative proportions belonging to each person respectively. Sometimes the out-going tenant will claim as fallow wheat two-thirds of that which may be grown after turnips. This he always resented, because the turnip ground ought to be left for the in-coming tenant to sow with barley; and unless it should have been quite necessary to sow some portion of the turnip ground in order to make up the proper off-going quantity of wheat, he would only allow seed and labour, and even that unwillingly. The out-going tenant would sometimes claim to be allowed the consuming price of the straw of the off-going wheat crop, and this might become an extremely difficult question, because if he could show that he paid the consuming price of the wheat straw when he entered he would be entitled to the same allowance on quitting; and it must be borne in mind that if he is entitled to be paid the consuming price of the straw, it followed that he is entitled to consume it on the premises, if the in-coming tenant will not consent to give the price demanded for it. In his opinion the straw of the off-going crop should always be deemed the property of the in-coming tenant. Thus again, the wheat crop is held to be until harvest in the possession of the out-going tenant, who may lock the gates of the fields, and refuse to allow the in-coming tenant to hoe the wheat, even at his own expense. All these difficulties might be avoided by a written agreement. He was not aware of any special custom in Staffordshire with reference to a Michaelmas quitting. Customs, he believed, were much less common in that county than in Warwickshire or Worcestershire. In North Warwickshire there was, so far as he knew, no well-defined general custom. A man always leaves as he entered, and there were hardly two cases exactly alike. The majority of tenancies commence at Lady-day, but many also at Michaelmas. In the former case, when the Staffordshire custom is

not adopted, the out-going tenant generally takes the whole of the fallow wheat, paying sometimes a year's and sometimes only half a year's rent, tithe, and taxes upon the land on which it was grown, and receiving also the cost of seed and labour for the brush wheat. In other respects the conditions of quitting would be very similar to the Staffordshire custom. Sometimes the straw is left without compensation, and sometimes it is paid for at a consuming price. In the case of a Michaelmas quitting, the out-going tenant generally has the use of a room in the house, and in some cases the whole of the house, till the following Lady-day. In that part of Worcestershire lying near to Birmingham, there was a local custom, extending over perhaps five or six parishes, where the out-going Lady-day tenant takes the whole of the wheatcrop, paying to the new tenant 6s. 8d. per acre for the fallow wheat, and 13s. 4d. per acre for the brush wheat. Sometimes the out-going Lady-day tenant pays the half-year's tithe rent-charge to Michaelmas on the wheat land; but this is only where it is clear that his predecessor did the same. In fact, half the questions connected with the quitting, here and elsewhere, were determined rather by the alleged mode of entry in each particular case than in accordance with any recognised general custom. This was one of the great objections to relying upon custom for the manner of quitting a farm. It was almost a necessary result that in dealing with an out-going tenant who happens to be a troublesome or unprincipled man, the in-coming tenant is forced to pay him on quitting far more than he is really entitled to, because, in most cases, the out-going tenant alone knows how he entered, and may allege anything he pleases, which would be generally very difficult to rebut, however unreasonable or improbable it might be. It is, of course, just as possible for the in-coming tenant, or the landlord if there be none, to be awkward and unreasonable too. Having referred to existing customs, it might perhaps be expected that he should offer some suggestions on the possibility of amending them. He felt this to be very tender ground; but he should bring the paper to a very lame and impotent conclusion if he did not venture to give some kind of an opinion upon this, the most important feature of the question. He would state at the outset that he did not desire to see the "custom of the country"—meaning thereby the unwritten custom—extended beyond its present limits. Any allowances for improvements, of whatever kind they may be, should be the subject of a carefully-written agreement, or great difficulty and mischief may arise. With the proviso that no man shall be entitled to such allowance by virtue of any alleged custom, he should be glad to see, within reasonable limits, a general practice prevail of compensating an outgoing tenant for any outlay on his part from which he has not derived a fair and adequate return. It was obvious, however, that the details of such an arrangement must be carefully considered, and the limits accurately defined. It must not be forgotten that the landlord had some rights in the matter; and, moreover, there was the incoming tenant, whose interests were as much entitled to fair consideration as those of the tenant who was quitting the farm. With regard to permanent improvements of all kinds, such as new buildings or draining, these should, if possible, always be done by the landlord, the tenant paying an increased rent by way of interest on the outlay. Where a landlord is either unable or unwilling to expend money on such objects, permission in writing should be asked and given to the tenant to execute these works, with the understanding that the outlay shall be considered as spread over a given number of years, and that, if the tenancy shall terminate before that time has expired, a proportionate part of the cost shall be paid by the incoming tenant. Such permission would of course not be given unless the necessity or advantage of the proposed outlay was apparent; but if a tenant desired to erect buildings which to the landlord did not seem necessary, there could be no reasonable objection to give permission to remove them at the end of the tenancy if the new tenant declined to pay for them. A legal difficulty might arise in certain cases where the landlord, being only tenant for life, could not bind his successor; but this might be easily remedied by legislation. With regard to any allowance for purchased manures, or oilcake, or other food consumed by cattle, this was a question purely between the out-going and in-coming tenant; and he saw no objection to making it part of the ordinary agreement for letting a farm that, under certain conditions, and within defined limits, a reasonable allowance

should be made to the away-going tenant on quitting his farm. It was essential, however, that this system should not be carried too far, and that such allowances should be carefully restricted, so that the in-coming tenant might not have to pay for anything from which he would not derive a clear and palpable advantage. Any allowance for manures ought to be strictly confined to such as are used not in lieu of, but in addition to that which arises from the consumption of the produce of the farm. No manure should be allowed for, under any circumstances, which has been used upon corn crops; and the allowance, whatever it may be, should be confined to the last year, or at most the last two years of the tenancy, except in the case of bones applied to grass land, the advantage of which would extend over a period of several years. It would be necessary also that the character of the manures, and the proportion of the cost thereof to be allowed for, as well as the kind of crops on which they may be used, should be carefully specified. With regard to cake and corn consumed by cattle, he was willing to admit that some allowance might fairly be claimed, but the proportion allowed for ought to be small, and the allowance should not go back further certainly than two years, and he was rather inclined to think only for the last year of the tenancy. Let it be clearly understood that the object of such allowances was not merely to enable an off-going tenant to put a large sum of money into his pocket when he quits his farm, but rather to promote a better system of cultivation, and to provide that the in-coming tenant shall pay his fair proportion, but no more, for the advantage which he will undoubtedly derive therefrom. Such a system, however, if carried to an undue and unreasonable extent, might entail an unfair burden upon the in-coming tenant, and ultimately involve the landlord in most unpleasant consequences. It was every man's duty, and ought to be his pride, on quitting a farm, to leave it in such a state that he would not himself object to take it; for in farming, as in every other vocation in life, "Do as you would be done by" was the truest principle of action; and the soundest maxim, "Honesty is the best policy."

Mr. BALDWIN said the reason why agreements were not more general in times gone by was that the farmers were possessed of so little education that they did not know how to draw one up, and could not understand it when it was drawn up. But they were now better informed; and he was convinced that no interest would benefit more by the diffusion of knowledge than the agricultural interest. Farmers meant for the future to have their fair share of the profit arising from the cultivation of the soil—not in an offensive sense, but in order that all might strive together to promote their mutual interests. He was satisfied that a written agreement was necessary between landlord and tenant in every case; and that it should be simple and fair to the in-coming as well as to the out-going tenant, and also to the landlord.

Mr. LOWE said the management of farms was a subject of great interest, not to one, but to three classes—namely, the landlord, the tenant, and the public. The landlord was, generally speaking, the most favoured party. This was attributable, not to the selfishness of the landlords, but to the good-nature of the farmers themselves, who in times gone by had not sufficiently exerted themselves for their own benefit, and in their own particular interest. They had taken things for granted more than, as men of business, they were quite justified in doing; but with the spread of education they would, he hoped, become wiser. Some twenty years ago a Royal Commission was appointed to inquire into the subject the club was then discussing; and the suggestions which were contained in their published report were in a great degree similar to those which Mr. Fowler had advanced in his paper. The great desideratum was a thoroughly mutual and equitable agreement between landlord and tenant, nothing being left to custom.

Mr. FORD could not agree with Mr. Lowe and those who thought that the public had any right to interfere in questions as to the relations of landlord and tenant. He was fully impressed with the importance of having agreements. The chief consideration, however, was not the agreement, but the terms of it. If an agreement were clogged with all kinds of old-fashioned restrictions as to the amount of acreage under different crops, the succession of crops, and such-like, he thought it had better not exist at all. The object should be, not to instruct the tenant how to farm his land, but to tell him how he must leave it.

Mr. HORLEY said that, in regard to compensation for unexhausted improvements, the consumption of cake, &c., an average of several years should be taken, and not the last year only. The outgoing tenant, too, should not be allowed to spend more during the last year of his occupancy than his previous average. Nothing would do so much for the farming interest as the establishment of a fair system of compensation to an outgoing tenant for any outlay of which he had not reaped the benefit. In Lincolnshire this kind of agreement was almost universally the rule; and he attributed the very superior cultivation of that district to the beneficial working of such agreements.

Mr. WRIGHT thought that Club was pretty much in the same position with respect to the subject then under discussion as it was on its formation five years ago. They appeared to him to be only doing what, as had been admitted those philanthropic persons who were anxious to lessen the poverty, ignorance, and crime to be found in our great towns were doing—simply scratching the surface. No scheme of compensation for unexhausted improvements would, he believed, be found sufficient fully to develop the agricultural resources of this country, or to place the farmers in a position which would induce them to employ in the cultivation of the soil that amount of capital which was necessary if its productive power was to be increased to the fullest extent of which it was capable, and which it was most desirable should be done, not only for the benefit of the farmers themselves, but of the whole community. He could not agree with those gentlemen who contended that questions of this nature did not concern the towns. On the contrary, he maintained that the towns were interested in a great degree, not only in the means necessary to ensure the increased production of the soil, but in regard also to the employment of labour in agriculture. He coincided in the opinion expressed by Mr. Bright some time ago, to the effect that the land does not, and has not, employed its fair share of the labour of this country. The consequence of this had been that large numbers of the labouring classes were driven from country districts into the towns, where the condition of masses of the population, as some gentlemen present well know, was wretched almost beyond belief. We were now legislating on the tenure of land in Ireland, and proposing to give the sanction of law to some of the customs already existing there; and, where no customs existed which afforded protection to the tenant, to impose a penalty for arbitrary eviction. In the course of last year attention was drawn to a case which would hereafter be known as the Mansfield case, in which, owing to circumstances to which he would not on that occasion further allude, a highly respectable tenant had notice to quit. He had occupied two large farms for a number of years, and the loss in the value of his stock, in consequence of the forced sale which necessarily took place, was estimated at at least £1,500. Now he (Mr. Wright) would ask any farmer present whether, if he were compelled to leave his farm at six months' notice, and, having no other farm to go to, his stock had to be sold, he would not be very much in the position of the farmers in many parts of Ireland? A farmer without a farm was almost as helpless as a fish out of water. No compensation on the principles suggested by Mr. Fowler would meet the case to which he had alluded, and no system under which it could occur was likely to attract sufficient capital to the cultivation of the soil. In discussions of this kind it was all very well to talk of the application of the commercial principle, as his friend Mr. Lowe did; but it must be borne in mind that the state of tenants in town and country was widely different. In towns, a man had usually the choice of a number of shops, offices, or manufactories; but in the country, if a farm were vacant, there were a dozen or more applicants for it. At the same time, a farmer could not make his own terms, for, as Mr. Fowler would bear him out in saying, on nearly every estate there was a special form of agreement to which the applicant for a farm must bind himself if he became a tenant. No form of agreement at present in existence, he repeated, was sufficient to justify a farmer in using increased capital on his farm; and, while he did not ask for fixity of tenure, he contended that, either by leases or in some other way, the position of the tenant farmers of England must be rendered more secure and satisfactory than it had hitherto been.

Lord LICHFIELD agreed with every word of Mr. Fowler's paper so far as it went; but he was a little disappointed at

finding that that gentleman had not had sufficient time to enable him to prepare a paper which should touch, not merely upon the customs in the immediate neighbourhood of Birmingham, but those existing throughout England. At this time, when the whole question of land tenure was occupying so much attention, such a paper would be most valuable. There was no doubt that, in regard to the question of compensation for unexhausted improvements, a very strong feeling was prevalent amongst tenant farmers, and sometimes amongst landlords, that some system, as nearly uniform as possible, should be generally adopted. He thought all present would coincide in this; but the question was as to how it could be brought about. Many suggestions upon this point had been made. Some persons advocated legislation; but legislation upon this subject he had always maintained to be a very difficult matter, although to a certain extent he was in favour of it. If they were to legislate, the first step was to ascertain whether they had any customs existing in any part of the country, and then to combine them in such a manner as to secure something like a practical measure. But in dealing with Mr. Gladstone's attempt at legislation with regard to Ireland, the House of Commons were going to work with apparently the utmost possible ignorance on the whole subject; and they were legalising—at least they thought they were legalising—a variety of customs, none of which anybody could define, none of which anybody attempted to understand, and none of which anybody expected to see any legislation affect. He protested in the strongest terms against the way in which this Irish legislation was being carried out, because it showed what he considered a want of intelligent consideration for those upon whom they were going to apply it. He had listened with attention both to the paper and the discussion, and had not heard a single practical suggestion. The tenour of the remarks which fell from Mr. Wright was evidently in favour of legislation; but they did not point out the manner in which it should be applied. So far as agreements were concerned, he had done his best to procure the adoption of one which was reasonable, and suited to the requirements of the country at large. He was only sorry that more interest had not been taken in the subject, both by landlords and tenants; for if such had been the case, a tolerably uniform agreement would by this time have been in operation. Mr. Fowler had said that an agreement should be as simple as possible. It must, however, be remembered that if you had an agreement, which, after all, was to be interpreted at the end of the tenancy by arbitrators, you must have something in that agreement to show the arbitrators how to act. So long as agreements provide that the tenant during the continuance of his occupation shall be free to make the best use he can of his land, you could not be too particular in laying down the principle upon which the arbitrators are to act when the tenancy ceases. His own agreement had been very much discussed; but he had never heard that any practical amendment of it had been proposed. He had told his own tenants to try to pick a hole in it; and it had gone through the ordeal so satisfactorily that he had seen no reason to make any alteration. He wished Mr. Wright had intimated what other course ought to be pursued. What that gentleman evidently wished for was fixity of tenure, either by leases or some other means. To give complete fixity of tenure the leases must, of course, be compulsory, which entailed the further question of Government valuation. He thought, however, they would all admit that any attempt to make leases compulsory would be simply a farce, unless the rent was also fixed by Government. He knew of no way out of the difficulty except the one he had always suggested as being really sufficient, provided the landlords and tenants throughout the country would agree thereto—namely, to adopt a system which shall give such ample and full compensation under the agreement for everything that the tenant can in justice ask for that it could not possibly be the object of the landlord to turn him out so long as his farming was good.

Mr. MASFEN, the Chairman, regretted that Mr. Fowler had not gone more deeply into the subject, and said he would especially have liked to hear his opinion upon the agreement to which the prize of the Royal Agricultural Society was awarded. A twenty-one years' lease meant, in his opinion, seven years of improvement, seven years of keeping up to the mark, and seven years of deterioration. He thought nothing was more fair than that the in-coming should pay the out-

going tenant for any improvement the latter might have made during his occupancy. All restrictions as to rotation of cropping were very irritating; and the greater the freedom allowed to the tenant in these matters the better. In order that the

subject might be thoroughly discussed, he should wish the consideration of it to be adjourned to some future time, when he would be prepared with a schedule of what he thought was fair compensation from the in-coming to the out-going tenant.

FARMING IN SOUTH AMERICA.

Mr. E. W. LOGGIN, brother of the Secretary of the Mel-plaish Agricultural Society, who has had some experience in Uruguay, recently read the following paper:

The republic of Uruguay is not an agricultural, but a grazing country, but yet grain is grown there to a small extent. Wheat, Indian corn, and barley are grown, but oats do not thrive well. The land having been for so many years used simply for grazing, does not require manure. The climate is very variable, sometimes a great deal of rain falls in summer, and at other times none at all. The winter is also subject to some changes. It is also very hot in summer, and for months together, but never very cold in winter, the glass seldom going below freezing point, and even then I have never observed ice to last after mid-day. The land is ploughed by oxen and a plough "of which I have made a rough imitation for your inspection," and I really believe that Adam, if ever he used a plough, must have used a very similar one (laughter). Of late years English and American ploughs have come greatly into use, but it is astonishing how difficult it is to persuade some of the natives of their advantages over their own. Horses are but seldom used to plough. They are very small and have not sufficient weight to throw into the collar, and further are found not to stand the same amount of work, day after day, that oxen will. The crop is reaped with a hook and stacked as in England, but it is afterwards thrashed in a very primitive way. A circular space is enclosed by large posts, very high and rather close together, and these posts are secured one to the other by a wooden border, running all round the fence. The corn is then placed on the ground and a troop of mares, which are bred in great numbers there, and are quite unbroken, are then driven in, and the gate being closed are driven round and round, treading out the corn. This is evidently a very old way of thrashing, as one of the commandments to the Israelites was, "Thou shalt not muzzle the ox that treadeth out the corn." The only difference from the commandment being mares instead of oxen. Oxen are also used for the purposes of draught, where heavy loads are required to be taken, being yoked to a cart running on two wheels, six oxen to a team. These carts, if possible, even more clumsy contrivances than a Dorsetshire waggon. The oxen will travel with these carts containing a ton and a half to a load, at a rate of 20 miles a day, for weeks together, resting, of course, on Sundays, and cross rivers and streams, and all descriptions, without bridges. I will now come to a more important branch of farming in that country, viz., cattle farming. A farmer there rents or buys his land by the square league, and, in order to stock it, buys any quantity of cattle he may require by the lot, consisting sometimes of several hundreds, or even thousands, which are worth, one with another, about sixteen shillings a head, the seller being allowed to draw off a certain portion of fat cattle for market. These cattle are all branded with a red hot iron, each farmer having his own particular brand, for which he had to take out a certificate, and on purchasing these cattle they are all shut into a large enclosure, or *corral*, as it is called in Spanish, the fence consisting either of wood or stone. Each animal is then lassoed by the horns by a native, another lassoing it by the legs, and throwing it down. It is then rebranded by the former owner. This is called "countermarking," and is equivalent to no mark at all. The purchaser then places his own brand on. When they are all branded they are generally left shut up all night, and the following morning are taken home, where, when they have fed a few hours, they are again shut up for the night, and let out in the morning to feed, being watched by men on horseback, to prevent their escaping. This is continued for two or three months; after that, instead of shutting them up at night, they are gathered every evening on the same spot, and watched until they lie down, and are then left

until the following morning, when they are again collected for a short time. After a few months they are considered sufficiently accustomed to the ground to stay without much further trouble, being gathered once or twice a week, at the option of the owner. A fat cow will fetch about 32s. and a fat ox 40s. They are either sold, if very fat, for market, or if only moderately so, are sold in large troops to make jerked beef, of a sample of which came to England a few years ago, and I heard it fetched 3d. a pound. It is very dry and hard; very like old shoe leather, with less flavour and far uglier to look at (much laughter). Beef in the towns is worth 14d. a pound. Mares are kept much in the same manner, but are never ridden, being kept entirely for breeding purposes, and moreover it is considered a disgrace to ride a mare. There is one curious fact I have often observed, and it has also been noticed by others, that a stallion will frequently drive all the fillies of his own getting out of the troop as soon as they are furnished, thereby instinctively preventing that in breeding so ruinous to all stock. I will now give you a short description of the manner in which sheep are fed. They are run in large flocks of from one to three thousand, and are taken care of by a man on horseback. They are gathered on one spot at night, and are, by constant watching for a month or so, taught to stay there, and are not allowed to go off to feed in the winter until the dew is quite off the grass, as it is supposed to make them very thin. The rams are put into these flocks (which generally have a considerable per centage of wethers) early in October, thereby bringing the lambing on in March and April. Forty per cent. of lambs to a mixed flock is considered very good, but a flock consisting entirely of breeding ewes will give from 70 to 90 per cent. The custom was to have two lambing in a year, one in March, being the autumn lambing, and one in September, being a spring lambing, the 25th of December corresponding to the 24th of June here, or in plainer terms summer here being winter there, but it is now generally allowed that one lambing is more advantageous, bringing as large an increase, in the long run, and the sheep keeping in better condition. The sheep are a cross of the original sheep of the country, a very loose long woolled sheep, something like the Black-faced sheep in Scotland, regarding the fibre of the wool, but I should say inferior in every other respect, being almost impossible to fatten. These sheep were crossed with the English Leicester and Southdown and the pure Merino, but the English blood being found so liable to scab, the Rambouillet took their place, producing a very fine, although not a very long wool, and plenty of it, an average flock, "shearing all the shears can be got into, both small and great," yielding an average of 4lb. a fleece. These sheep, ten years ago, were worth 12s. a head after shearing, but to-day would, I dare say, fetch 12 pence. Saxony rams have been introduced of late years, and have proved very remunerative, being very fine and close in their wool, and shearing up to 15lb. a fleece. Ten years ago fine wool was greatly in demand, and good mestizo wool ("Mestizo is half-bred merino") fetching in Monte Video 10d. to 1s. a pound, but this class of wool is not nearly so much in demand now, a longer staple being preferred, and consequently wool has fallen to 5d. per pound. Shearing costs about five farthings a sheep, a ram twopence, but the farmer has to keep the shearers during the shearing, and find men for catching, tying, and bagging or baling, as the case may be. A fat ewe will fetch 2s. 6d., and a fat wether about 3s. 4d., for market; a good average wether reaching to about 14lb. a quarter, I should say, although I have seen them reach 17lb.

Mr. Loggin then exhibited the plough to which he made reference in his paper, and illustrated the manner in which it was used.

STAINDROP FARMERS' CLUB.

At the last meeting, Mr. T. F. Scarth, the president, in the chair,

Mr. NEASHAM read a paper on "The Hiring of Farm Servants, and the mode of Paying them." He said: Most of you will, I think, agree with me that the time of changing our servants in this district—that is, at May-day, is attended with some inconvenience, as the turnip season is then at its height, and every hour lost at that season is of great consequence, not only in the labour of the man, but his wife also, who cannot be expected to leave her house and family just when they have removed into a strange neighbourhood, and have various wants to supply. In the Lothians, I believe, the 29th of May is the time at which the change is made, and in many parts of the country Michaelmas or Martinmas, which is not generally so busy a time, and when the labour of both man and wife can be better spared for a day or two. To change the custom of any country is always a matter of great difficulty, for farmers cannot at all times be brought to act together, when it is even for their interest that they should do so; and whether Chambers of Agriculture may not, after more important matters are disposed of, be the means of altering this state of things, and taking up such subjects as this is, I conceive, well-worthy the consideration of their members. There is another class of farm-servants—to the hiring of which I must allude—and that is of young unmarried men and women who are usually boarded and lodged in the farmer's house, and these, for the most part, are to be found at the ordinary statute hirings a few weeks before the term—a mode of hiring that has been strongly denounced by some people as tending to vice and immorality. I cannot, however, see how it could be otherwise arranged, so long as the changing from one master's service to another is at one and a fixed time in any district; for, if you adopt the plan of a register-office, which many recommend, their names should be put down some considerable time before the term-day, to admit of anything like adequate attention being given to the many applications that would have to be made, or for the masters to make inquiries as to their characters and qualifications. To many farmers, particularly those of a higher standing, this mode of lodging their men in the house cannot but be a source of constant annoyance and inconvenience, inasmuch as their house, under such circumstances, can scarcely be called their own. In many counties it is no uncommon practice in hiring their foremen, to require them to lodge so many young men in their houses, paying them a sum per week to be agreed upon; but this, of course, can only be carried out where the farms are large, and the dwellings on them sufficiently commodious. Much has been said and written of late on the subject of educating the farm labourer; and none of us, I presume will deny its great advantages so long as that education is directed to their moral and practical, as well as intellectual improvement. The mistake, I fear, is often made of confounding it with learning, and education proper is, for the most part, if not entirely, lost sight of; for if an agricultural labourer's boy is taught to read and write well, and to keep a correct and honest account in figures of what may be entrusted to him, that is, I maintain, in ninety-nine cases out of a hundred, all that will ever be required of or use to him. It cannot be doubted that in the present time, when new and improved implements, as well as steam, and machinery of various kinds, are annually introduced into the practice of agriculture, a few labourers are required possessing a more extended knowledge of mechanics and other sciences; but a boy whose mind takes a turn in this direction, will sooner or later show the bent of his inclination, and discover the means of improving himself therein. I will now pass on to the second part of my subject, viz., "The mode of Paying our Farm Servants," and in doing so would more particularly invite your discussion as to the relative merits of our own system, as regards the payment of our hinds in money (weekly or fortnightly, as the case may be), or of that adopted in other districts, of paying mostly in kind, and a part only in money. Our plan is doubtless attended with less trouble, and

affords the labourer the opportunity of going, money in hand, to supply his wants in the cheapest market; but I question very much whether it supplies us with as strong and healthy a servant as when he is paid monthly in kind. This year, certainly, on the score of economy, those districts which adopt the latter mode have had a decided advantage, seeing that all cereal produce, upon which they chiefly subsist, is selling at a low figure in the market. It will be admitted, I think, that farm wages have within the last 20 or 25 years advanced here something like fifty per cent.; and, with all this, we have not, it may be said, so contented, willing or industrious a class of men as formerly, nor one among which so much providence and self-denial is practised, for it is no uncommon thing now to find that, with wages averaging from 16s. to 18s. per week (including, I mean, such privileges as potatoes and a house, rent free), the chances are, the servant has to apply to the parish for relief if sickness or other casualty befall him for awhile, as there is seldom anything laid by, the whole of his wages having, in many instances, been spent, and that perhaps extravagantly, as soon as received; besides, when the men are earning so much hard cash, the wife cares little whether she goes out or not. I have made some inquiries respecting their system in Northumberland and other parts north of this, and really, in many respects, their hinds may be said to have little farms or menageries. But, with your leave, I will transcribe an instance or two. From the neighbourhood of Alnwick a friend of mine, who farms largely, writes: "The wages in this district are paid most in kind, with part money—a method preferred generally by both masters and men. The wages which a fair, good man receives in this neighbourhood are about as follows: 14 Winchester bushels of wheat, 24 bushels of barley, 12 of beans or peas, and 30 of oats; a cow kept on grass during summer, three single horse-loads of hay (two tons), with oat straw *ad libitum*; an outtake during the winter; in addition to these, men who have a cow get £4 in money; those who have no cow get 5s. per week without the £4; their house free, and coals led, but the coals themselves they pay for; a suitable garden and land provided to set 1,000 yards of potatoes; but since the disease most of them set only 500 yards, and receive £2 in money for the other half. A piggy provided to keep a pig, a privilege of which most of them avail themselves, by keeping two or three during the year. The hind is expected to find a worker, who is constantly employed (weather permitting), and generally a female, who gets 1s. a day throughout the year, except in harvest, when they receive from 2s. 6d. to 3s. per day. In instances where men prefer to be paid in money, they receive 15s. or 16s. a week, with house." With regard to the worker here mentioned, he, I presume, though my friend does not say so, paid the ordinary wages of a casual or "dotal" man. The money value of these privileges is something like equal to 16s. per week. Another correspondent, from Roxburghshire, where the labourer was paid in kind, stated that the sum total of what he received was equal to £33 8s. 4d. per year, or 13s. per week. One of the items was the keep of a cow, put down at £6, and 100 stones of oatmeal at £9 3s. 4d. Turning our attention southwards, we find in a late issue of the Royal Agricultural Society's Journal, from reports by Mr. H. M. Jenkins, that on Mr. Torr's farm, in Lincolnshire, the labourer gets from 13s. 6d. to 15s. per week in money, with the privilege of cropping a plot of potato ground; the superior workmen are paid equally well in proportion—a part of their emolument, however, being a good cottage, rent free, which may be valued at 2s. per week. Mr. Torr has three farms adjoining townships, and his foremen get from £32 to £33, with other privileges, such as cottage and garden, rent free, malt, pig, poultry, worth in all from £42 to £47 10s. per annum. The shepherds' wages are a little lower, being, I suppose, older men. Then again, in Norfolk, on Mr. Hudson's farm, at Castleacre, the bailiff, Mr. Jenkins reports, gets a guinea per week; the yard or cattle man 14s. 6d. per week; engine-driver 3s. per day; and the ordinary farm labourer

from 10s. to 12s. per week; lads 8s. to 9s.; and boys 4s. 6d. to 5s.; while women get from 10d. to 1s. per day. All these payments are made in money, there being no privileges in addition to the wages. Cottages with gardens are paid for by the men at the rate of from 1s. 3d. to 1s. 6d. per week. Mr. Jenkins adds, a considerable amount of field work is paid for by the piece. These wages appear somewhat the same as we are paying; but in Wiltshire, Dorset, and other counties, they are much lower. Mr. Jos. Whitwell Pease, in a letter of his I saw to the Editor of the *Northern Echo* (quoting from a Parliamentary return), says that in the Bedford and Woburn Union the wages are 11s. a-week; in Suffolk, in the Stowmarket Union, 9s. to 12s.; in the Sampford Union about 11s.; at Blything 10s.; in Devonshire in the Axminster Union, 8s. to 9s. a week; in Dorsetshire, 9s. 6d. a week; and, with these lower wages, longer hours are exacted and cheerfully given. Whether more work is done I have often heard it doubted; but, as far as my own observation goes, I don't see but what it is, and often of a better quality. There is no doubt that, as we approach nearer to the large manufacturing centres, wages are generally higher, though their work is not so certain or regular as that of the agricultural labourer. It has always struck me that the hours of our "datal" men are very short in comparison to their wages, or to the hours given in other districts, and that they should be required to give ten hours of absolute work at the least. With draughtmen it is different, they having other work to attend to after their horses are unyoked; and, if ploughs are kept going steadily from 7 a.m. to 5 p.m., with an hour or so for dinner and rest, it is quite as much as one can expect them to do and keep them up to their work. In busy times, such as the turnip season, hay time, and harvest, hours cannot be limited, though I know of a case, which occurred in this district a few years ago, where some of the men refused to load any more corn after five o'clock. Happily, we are not often troubled with "strikes," though it were well, I think, that the law of "master and servant" were somewhat altered, seeing that as it now stands, the remedy, in the case of a refractory servant, is worse than the disease.

Mr. W. T. SCARTH advocated labourers' children having all the educational advantages they could possibly obtain. The hiring at statutes he did not altogether approve of—though it was a difficult thing, perhaps, to substitute other means in a district where it had been habitually the practice to effect engagements in that manner. In reply to what Mr. Neasham had said, he regarded hinds as a very provident class of men. He thought they did wonderfully. Having large families it was surprising to see how they educated and clothed them, and got them out in the world. They were men who indulged in few luxuries; and he thought they would compare with any class of men in the country. He had been a great deal in the southern counties—Dorsetshire, Wiltshire, Bedfordshire, &c.—and in these places the men had mostly an allowance of drink besides the 9s. 6d., 10s., or 11s. in weekly wages which they received. The master found the man a small barrel of beer, which he took into the field with him, in Shropshire, and he was besides that receiving 10s. per week. They never heard here of a farming man drinking anything but water or milk whilst at work on the farm. He believed that our labourers in the North of England were equal in point of intelligence and ability to carry out the work entrusted to them even better than the labourers in the south, who, though able-bodied men who did their work, had no "head" in comparison with the north-country man.

Mr. BRODIE said the plan they had of paying farm servants in money was much better than payment in kind. With reference to "Bondagers," farmers in Northumberland, with 600 or 700 acres had nine or ten hinds on the farm. They were found all in kind. They were, however, obliged to keep a "bondager"—a woman, but their wives did not go out to work. Their wives were, he was told, obliged to stay at home to make butter for the cow they kept. He thought, therefore, that there was no advantage in the hinds having to keep a "bondager." He thought it would be better for the wives to go out to work.

The PRESIDENT: There is one thing, it allows the wife to take care of the family.

Mr. BRODIE remarked that these "bondagers" worked in the fields from six o'clock in the morning to six o'clock at night, and sometimes helped in the house at night,

Mr. BRUNSKILL thought the farm-servants very well cared for in the district, but was in favour of their being better educated.

Mr. SMURTHWAITE, jun., said his experience led him to think that hinds were better paid in this neighbourhood than further south. He approved of money payments to hinds. He thought the statute hirings falling in May was a very inconvenient time indeed. On the Yorkshire Wolds there was only one hiring at Martinmas. In Worcestershire he had found that labourers were generally paid 9s. to 10s. per week, and they had no house. Whether it was from drinking their cider that they did not spend so much money on beer as the men in the North he could not say, but they appeared respectable at church on the Sunday, and the wives of labourers did not work there as they did here.

Mr. HAWDON, jun., said that if a less busy time were selected for the period of hiring, it would be better. He thought the payment in kind tempted the men to take things on the farm.

Mr. MIDDLETON thought May-day the best time to hire married men, and Martinmas the unmarried. The tendency now was to pay in money and not in kind; but he did not think it so much to the advantage of the labourer. The southern labourers, he thought, could not push on at a busy time as they could here.

Mr. HODGSON thought the hiring longer before the term than should be the case; the later statute hirings would be better at Christmas, when there was less doing than at Martinmas.

Mr. SUTTON agreed that the hirings on the first Monday in March was too early. It would give great trouble to have to pay in kind. The men here were more active than in either the south or in Scotland.

Mr. HAWDON thought they ought always to require a character from the previous masters, which was not now done at the hirings. If they adopted this course, and each master gave an honest character, it would be a great advantage. House rent, estimated at £2 or £2 10s., was much too low. It stood the master, including taxes, at least as high as 2s. per week. The wages were 15s. per week, and perquisites of all sorts made nearly 20s. a week. They could not very well do without women labourers, though they could obtain Irish labour on the whole as cheap. It was an advantage to a labourer and his family that the woman should work. "Datal" men ought to work longer hours. They often did not work more than seven hours and a half.

Mr. BELL continued the discussion, referring to the Northumberland system, and the plan adopted in Scotland. He agreed that young men in the farmhouse were a great nuisance; and spoke of children being better brought up in isolated hinds' houses on a farm than in villages. He agreed that "datal" men worked too short hours.

Mr. KAY said he strongly objected to payment otherwise than in money. To have married men living on the farm was the most satisfactory to the master. He thought the children, as a rule, should not be sent to work till they were 12 years of age, but should be sent to school. Female labour was not half so much wanted, as they now got machinery instead. Men went off to the ironworks oftentimes; but it was, he thought, on the whole, not much better pay than farm-labourers got.

Mr. GRAHAM approved of payment of money for labour. He wished there were schools to educate girls how to conduct the house, and be careful, as many a good servant was brought to beggary by the improvidence of his wife. He did not agree with hinds keeping cows, but they should be paid in money. Writers in the south seemed to overlook the wages paid in Yorkshire and Durham.

Mr. NEASHAM in reply said that the opinion seemed pretty general against the system of payment in kind. He thought the Scotch labourer did better on oatmeal than ours did on slops and tea.

After votes of thanks to Mr. Neasham, and to the President, the meeting separated.

THE INGREDIENTS OF A TURNIP CROP.

At a meeting of the Stewartry Farmers' Club in Castle-Douglas, Mr. Skirling of Croy, president of the Club in the chair,

Mr. McMillan said: Of all the crops we cultivate in this Stewartry, turnips take the precedence. The improving of the quantity and quality of this class of roots may therefore be looked upon as the key stone of our system of husbandry; and as the whole rotation of our farms is, in a great measure, dependent on the success for this crop, it is consequently a matter of vast importance to us farmers to know what their natural constituents are, so that we may become masters of our profession. This can only be done by becoming acquainted with all the essential constituents of the plant, especially the inorganic. Whenever we acquire this knowledge, along with the relative quantities of each inorganic material an acre of turnips abstracts from the soil, we will then be in a better position to understand how their organic compounds are elaborated and converted into nutritious substances to support the organism of animals. *Brassica rapa* and *brassica campestris* belong to the order cruciferae. All parts of these plants contain inorganic matters, along with a pungent sulphurous volatile oil. Their seeds also yield a copious amount of fixed oil (Schöedler). Their leaves evolve both phosphuretted and sulphuretted hydrogen (Petzholdt); and it has been calculated that turnips, through the agencies of their spongioles and leaves, will abstract from the soil and atmosphere an amount of matter equal to one million times their own weight (Wilson). To enable them to achieve this end successfully, it is the farmers' interest to secure for them all those conditions that experience and science have found to be necessary. The principles that govern the chemical reactions taking place in the inorganic ingredients in soils to support the vitality of plant life should guide the agriculturist in the purchase and application of manure. And I say without hesitation that we, as farmers, have hitherto very imperfectly understood these principles; and it is to be feared that until agricultural education is more advanced and farmers become more intimately acquainted with the soils they cultivate and the crops they grow, the same random system will prevail. All that seems to have been necessary to be done for the furtherance of this object is to have, year after year, a number of experiments with different kinds of manures applied to root crops without relation to the soil; and hence there is seen, in the details of these competitions, very great variations as to results. You may see a manure that produced the largest crop of turnips on one kind of soil, that may be placed in the lowest scale of valuation when applied to another. This, to my mind, distinctly proves how fallacious, and I should say disastrous, such experiments are to the interests of agriculture, as manures applied indiscriminately. There is another very expensive practice prevalent in many localities, viz., that of purchasing several kinds of fertilisers, and then incorporating them so as to apply all the constituents required by this crop. I ask what kind of opinion would we form of men who follow other professions if they were to adopt the same policy? For instance, if we had occasion to consult our medical adviser, and that gentleman could only tell us that there were certain kinds of inorganic constituents which overruled the chemical powers of our bodies. He might say that he did not exactly know the one we required, and it would be necessary for him then to give us a mixture of all kinds of medicine. Might we not then consider that such a practitioner had rather soon left the portals of the class room? The inorganic ingredients that support the functions of turnips are fixed upon a sure and unalterable basis. It is, therefore, much better for the farmer to prefer accurate figures in estimating for the purchase of manures to supplement the deficient ingredients of the soil for the crop intended to be grown, than mere guess work. When we adopt such prudence, the farms of this county will not only be kept in good condition, but there will also be an increase in their fertility. All writers on agricultural science are as one in regard to the inorganic materials contained in each kind of farm crop, and it is wonderful how close

their estimates approximate to the practical results. When carefully taken it has been found that thirty tons of swede turnip bulbs have the following quantities of inorganic materials—viz.: 127 pounds potash, 100 pounds soda, 73 pounds lime and magnesia, 16 pounds oxide of iron and silica, 23 pounds chlorine, 86 pounds sulphuric acid, and 50 pounds phosphoric acid (Anderson); and if one-third more is found in the roots and tops, thus an acre, if producing a crop of thirty tons of turnips, will lose over 600 pounds of the mineral ingredients just named. Farmers, before they replace these constituents for future crops, should know what their soil contains, and a close approximation may be come to by knowing the mineralogy of the rocks that have formed them. For in some soils there are only two or three ingredients of the mine above named that are necessary to be returned to the land by the farmer, while on other soils overlying a different class of rocks it may be requisite to replace four or five of them. Thus soils disintegrated from plutonic rocks generally abound in potash, while many soils on the lower transition (Grywacke) formation contain only minute quantities of this alkali. Hence turnips have been classed as potash plants, because the alkaline earth forms their largest inorganic constituent. There is one important consideration to bear in mind—viz., that is the production of a turnip crop the growth and quality is not so much governed by the maximum proportions of their essential inorganic ingredients as by the minimum. Thus, nine constituents are required for their healthy development, eight of these may be in excess of their wants, and only one of them in less proportion than they require. The production and value of the crop will then be altogether determined by the producing powers of this minimum constituent. It is true that plants have an elastic and yielding constitution. For example, turnips can appropriate, to a limited extent, one kind of inorganic food material for another, such as soda for potash, and magnesia for lime, and an extra quantity of phosphoric has been taken up when nothing but Peruvian guano was applied. But I have never seen it recorded that they will absorb a phosphate in place of a sulphate. Whenever this class of plants is subjected to unnatural variations in their inorganic ingredients, they cannot assimilate and convert their carbonaceous substances into so valuable food as when properly constituted. For instance, when turnips are grown with a perfect manure, such as farmyard dung, they are found to contain one-half more oil and gum, with nearly four times as much sugar as turnips raised from the same seed and soil by means of Peruvian guano. There is also an important difference in the relative proportions of the valuable constituents of their ash. Thus, the dung turnips contained eleven per cent. more potash and soda, with one per cent. more sulphuric acid, while the ash of the guano turnips contained nearly twelve per cent. more phosphoric acid. The value of these turnips, when tested for feeding purposes, was found as follows: viz., 2½ tons of turnips grown with dung increased the weight of animals as much as 36½ tons of those raised with nothing but guano. When the same amount of nutritious substances contained in the 36½ tons is concentrated into 2½ tons of this root, the difference of weight is water, and other useless compounds, requiring to be raised at least fifty degrees in temperature, at the expense of the carbon and hydrogen of the animal system. This experiment shows the fallacy of comparative trials with different manures, and until these competitions have for their basis the supplementing of the soil with those essential ingredients that turnips require, the largest may be the most unprofitable crop for the feeding of stock. I have no doubt whatever that an application of undissolved ground coprolites would produce a fair crop of turnips on some kinds of virgin soils where the mineral bi-sulphide of iron predominates, and were not the effects of insoluble phosphates in ground bones wonderful when first applied to turnip crops in this Stewartry? If their efforts had continued it would have been an easy matter indeed for the husbandman of the present day, for we could purchase at present as much phosphoric acid in bone material as would supply all that 30

tons of turnip bulbs, and two crops of 40 bushels of oats and straw require for thirty-two shillings per acre. But circumstances have now much altered in regard to the removal of inorganic materials from the land. Formerly our principal crops were oats: they are now turnips. A crop of 50 bushels of oats, along with the straw of this cereal, requires only about 10 pounds of sulphuric acid to form the necessary sulphates; whereas a crop of turnips of 30 tons is estimated to take at least 140 pounds of this acid for all its requirements. Whenever it became apparent that crushed bones did not produce their former good effects on some stratas, it surprised and puzzled many farmers to know the cause of their inaction. But fortunately the chemist, by his researches, was enabled to make known that this class of roots removed from the soil several ingredients which are not again replaced by an application of insoluble bone material, and therefore recommended that they should be dissolved by means of sulphuric acid. This process alters them both chemically and mechanically in such a manner that a tender plant can be immediately supplied with its necessary food. It is also of importance for farmers to know the action of sulphuric acid with the organic matters of animal phosphates (Johnston). This acid not only dissolves and decomposes these matters, but also converts a portion of them into urea, and a sweet substance termed gelatine sugar, for the nourishment of the young turnip. And will not the lignine of decaying grass roots and other carbonaceous substances in the soil be converted into grape sugar for the same purposes by the catalytic action of this acid, as is brought out by experiments in the laboratory when applied to starch or the lignite of linen? When these chemical changes were established, experiments and trials followed, and the first I find recorded was with bones dissolved with muriatic acid. In 1841 they were applied to oats on a moss soil. The report was that the straw appeared stiff and shining, and the ears were as well filled as if they had been grown on a stiff loam. In 1842 10 cwt. of this superphosphate was tested against 16 cwt. of dry bone-dust for a turnip crop. The result was nearly 4 cwt. per acre in favour of those that were dissolved. And a Mr. Tennant, in Ayrshire, found that 2½ bushels bones prepared with sulphuric acid was equal to 3 cwt. Peruvian guano. In 1843 a premium was offered by the Morayshire Farmers' Club to test the value of dissolved bones, which led to numerous experiments, and the conclusion arrived at was—that 4 bushels bones dissolved with sulphuric acid will produce as good a crop of turnips as 16 or 20 bushels applied in the usual form. At Gordon Castle 2 bushels bones were dissolved with 83 pounds sulphuric acid, and then diluted with 400 gallons water, at a cost of 11s. 6d. per acre. These produced a better result than 3 cwt. of guano, at a cost of 87s. per acre. In consequence of the belief that the inorganic part of bones was alone useful to vegetation, several persons have been at the trouble to burn them. Thus, 600 pounds of burnt bones were reduced to a fine powder, afterwards moistened and dissolved with only 60 pounds sulphuric acid. A portion of this superphosphate was tested more than twenty years ago by a Kirkcudbrightshire farmer, who found it equal to its own weight of guano. A comparison was made in England with the same superphosphate as a top-dressing for wheat, when 6½ cwt. increased the yield 2½ bushels per acre, while 3½ cwt. Peruvian guano increased the yield only 1½ bushels per acre. In 1868 I was an eye-witness of the good effects produced by dissolved animal charcoal on a portion of a field of oats (Island of Arran), where the crop had been sickly and appeared as if affected with wireworm. The farmer had been advised to purchase refuse bone char and vitriol, and after mixing them, he applied them to that portion of the field. The result of this application was that it resuscitated the crop from its sickly state, and made it far superior to the other portions of the field. And to prove that sulphuric acid was a manorial agent, Colonel Lindsay of Balcarras applied this agent diluted with water to an experimental field on his home farm. Although the crop of turnips was inferior to those manured with both dung and guano, they were far superior to those on that portion of the field where nothing was applied. Tinmann, when experimenting in Silesia, found that barley steeped six hours in sulphuric acid diluted in forty waters gave one-fourth more grain and straw; and Prince Salm Florsmar found that when a soil was destitute of this acid to form the necessary sulphates, the plants remained feeble and produced no fruit. Whenever

sulphuric acid is applied to bone materials it changes their carbonates into sulphates, and appropriates two atoms of the lime held in combination by the phosphoric acid of the insoluble phosphate, and converts it into a useful salt, while the remaining atom of lime and phosphoric acid forms that bi-salt commonly designated bi-phosphate of lime. Whenever a superphosphate is applied to the soil a series of reactions takes place according to the nature of the soil. The unneutralised phosphoric acid contained in it being soluble will combine with the alkalis to form other salts by which the young plant soon finds all its necessary inorganic food. It is much to be regretted that there is a diversity of opinion among the members of this club as to the mechanical condition of our soils in regard to the application of manures in a soluble or insoluble condition. I ask, did not our chemist, in the paper he read to us last spring, state "that we need not be afraid of drainage water carrying off soluble manures, as the soil had the power of retaining them and parting with them only to the plant?" And such may be further confirmed when it appears that about 90 per cent. of the farms of this Stewartry overlie trap and syenite formations. Their soils may therefore be classified as argillaceous. The greater proportion of them are what may be termed cold with retentive subsoils, and it has been calculated that an acre of soil nine inches in depth, disintegrated from granite syenite and greenstone rocks, will contain at least forty tons alumina (Alonzo Gray), and if only one-fourth of this earth was soluble it would be capable of retaining for the use of plants double the quantity of salts that are applied in manures, although all their ingredients were in a soluble condition. The farmers of this Stewartry, therefore, require fertilizers that will supplement all the essential ingredients of their farms, so as to keep up their fertility. It is also requisite to have an immediate return from the land we cultivate, to enable us to fulfil our engagements with the landlord, and not those kinds of manures that are inert in their action, and require an indefinite period to dissolve in the soil—these being both uncertain and expensive. Therefore, in so far as either practical or theoretical investigations have gone in respect to the development of a crop of turnips, they are in favour of easily decomposed phosphates and sulphates as the proper kind of salts to apply to the soils of this Stewartry. The more correctly we supplement the loss created by the previous crops, the more profitably will we be able to conduct our farm operations, in the meantime. And until farmers become scientific agriculturists, they should be more especially guided by the disinterested investigations of the chemist than by the interested opinions and friendly suggestions of the manure maker. In conclusion, I may state that this paper has for its basis the experimental trials and minute calculations of the most advanced writers on agricultural science.

Mr. JAMES BIGGAR, jun. (Chapelon), asked—first, "Do I understand Mr. McMillan to say that most of the arable land of this county consists of a retentive soil, with a cold bottom, rather than of a light, friable, porous soil?" and, second, "Do I understand Mr. McMillan to say that the chemist, in his report last year, recommended soluble manures as more profitable for the soil of this county than insoluble ones?"

Mr. McMILLAN referred Mr. Biggar to the paper that Mr. Stewart read to this club, where he would find the statement he had made. He further said that soluble phosphates and sulphates were the most suitable application for all soils that contained a sufficient quantity of aluminous earth.

Mr. MACKIE (Dunjarg) said that it was a matter of little importance, as the farmer should know himself whether or not his soil was sandy or gravelly.

BREACH OF THE CATTLE PLAGUE REGULATIONS.—At the Dorchester Shire Hall, James Cake, of Brompton Farm, was charged with neglecting to report the existence of the foot-and-mouth disease at his dairy at Duddle. In a herd of 46, 17 were attacked by the complaint, which the police discovered. The defendant, who had rendered himself liable to £68 penalty, was fined £5 and cautioned.—Thomas Kingsbury, cattle dealer, was fined 50s., or in default two months' imprisonment, for gross cruelty to three calves.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL: WEDNESDAY, May 4.—Present the Duke of Devonshire, K.G., President, in the chair; the Duke of Marlborough, K.G., the Earl of Lichfield, Viscount Hill, Lord Chesham, Lord Kesteven, Lord Tredegar, Lord Vernon, Lord Walsingham, the Hon. H. G. Liddell, M.P., Sir Watkin W. Wynn, Bart., M.P.; Mr. Amos, Mr. Baldwin, Mr. Barnett, Mr. Booth, Mr. Bowly, Mr. Cantrell, Colonel Challoner, Mr. Clayden, Mr. Davies, Mr. Dent, M.P.; Mr. Druce, Mr. Edmonds, Mr. Brandreth Gibbs, Mr. Hassall, Mr. Holland, Mr. Hornsby, Mr. Wren Hoskyns, M.P.; Mr. Jonas, Colonel Kingscote, M.P., Mr. Lawes, Mr. Leeds, Mr. Milward, Mr. Pain, Mr. M. White Ridley, M.P.; Mr. Rigden, Mr. Sanday, Mr. Shuttleworth, Mr. Stone, Mr. Thompson, Mr. Torr, Mr. Turner, Mr. Webb, Mr. Wells, M.P.; Mr. Whitehead, Mr. Jacob Wilson, and Dr. Voelcker.

The following members were elected :

Alcock, Thomas, Ratcliffe-on-Trent, Nottingham
 Armstrong, John Knight, Winsford, Chester
 Baskett, Nathaniel, Brames Hall, Wetheringsett
 Beeston, Thomas, Goldston Manor, Market Drayton
 Berridge, Samuel, Croughton, Brackley
 Berridge, Thomas Edward, Pimlico Farm, Tusmore, Bicester
 Bickerton, Samuel, Shotatton, Ruyton, Salop
 Birch, James, Pearse Hay, Penkridge
 Birchall, Edward, Willaston, Nantwich, Cheshire
 Chillingworth, John, Horspath, Oxford
 Chillingworth, William, Cuddesdon, Wheatley
 Crowthall, George, 4, Queen's Parade, Cheltenham
 Crompton, John George, Derby
 Decanville, M., Petit Bourg, Corbeil
 Decanville, M. Paul, Petit Bourg, Corbeil
 De Kergolay, Count, Camisy (Manche)
 De Moncault, Edouard, 127, Boulevard Hausman, Paris
 Derham, James, St. Thomas Road, Chorley
 Elwell, Charles James, Compton, Wolverhampton
 Fielden, John, Dobroyd Castle, Todmorden
 Fitton, Samuel, Willaston, Nantwich, Cheshire
 Fijlambe, Francis J. S., Osberton, Worksop
 Gammon, H. M., Frewin Court, Oxford
 Garne, Thomas, Broadmoor, Northleach
 Garside, Henry, Wharmton Tower, Greenfield, Saddleworth, Yorkshire
 Giles, F. Thresher, Marsh House, Bentley, Farnham
 Harcourt, Rev. W. Vernon, Nuneham Park, Abingdon
 Hargreaves, Edward Henry, Kirkham, Preston
 Hughes, James, Oxford
 Jones, William, Baschurch, Shrewsbury
 Lett, John, Stone Court, Kidderminster
 Lister, Edward, Cefn Ha, Usk
 Lloyd, John, Bod Lloyd, Raabon
 Mansell, Andrew, Little Ness, Baschurch, Salop
 Mather, Daniel, Chipping Norton, Oxford
 Milner, John, Myrescough, Preston
 Nelson, John, Wyham House, Louth
 Page, Francis, Uttoxeter
 Pennel, Charles, Westwell, Burford
 Roberts, John, Wellhouse, Saltney, Chester
 Rowland, Samuel, Grimsditch Hall, Whitley, Northwich
 Russell, John, Sutton, Dartford, Kent
 Scott, Lawrence, Moor End, Ruddington
 Seymour, Richard Arthur, Kinivarton Rectory, Alcester
 Sill, R. C., Parkfield, Swinton, Manchester
 Sollom, Francis, Pennfields, Wolverhampton
 Stapley, Frederick Arthur, East Lavant, Chichester
 Symonds, Frederick, 35, Beaumont-street, Oxford
 Symonds, Horatio F., Oxford
 Taunton, George, Oxford
 Tomlinson, J. H., The Parkey Farm, Wrexham

Vaughan, Edmund, Lapley, Penkridge
 Warner, Robert, 8, The Crescent, Cripplegate, London
 West, Richard Thornton, Streatham Hall, Exeter
 Wright, John, 30, Broad-street, Islington, Birmingham

FINANCES.—Colonel Kingscote, M.P., presented the report, from which it appeared that the Secretary's receipts during the past month had been examined by Messrs. Quilter and Ball, and were found correct. The balance in the hands of the bankers on April 30 was £3,583 Os. 10d., £3,800 remaining on deposit at interest.

JOURNAL.—Mr. Thompson (chairman) reported that the committee recommended the offer of a prize of £30 for the best account of the preparation, preservation, and use of sprouted grain as food for horses, cattle, and sheep, competing essays to be sent in to the secretary not later than the 15th of July. The committee also recommended that the invitation of the "Société des Agriculteurs de France" to the Royal Agricultural Society to take part in an International Congress to be held in Paris next year, be accepted; that the request to furnish a report on British Agriculture be complied with, such report to be prepared under the auspices of the Journal Committee; that it be suggested to the "Société des Agriculteurs de France" that the time of holding the Congress which would be most likely to secure a good attendance of representatives of British Agriculture, would be Whitsun week: and that in compliance with the invitation in one of the letters on the question, the following list of subjects for papers or discussion be suggested, viz.: Drainage, Implements and Machinery, Manures, Rotation of Crops, Fattening of Cattle and Sheep, and the Labourer. The committee also gave notice that at the next monthly Council they will move for a grant of £100 towards defraying the cost of an autumnal tour of inspections similar to that of last year. That report was adopted.

GENERAL OXFORD.—Lord Kesteven reported that the committee recommended that the Finance Committee be given power to obtain the assistance of some members of Council, in place of any Stewards of Finance who may be unable to attend the Oxford meeting. The arrangements for the supply of refreshments to the show-yard at Oxford, and the programme recommended for the Oxford meeting, were reported.—This report was adopted.

JUDGES SELECTION.—Mr. Milward (chairman) presented a list of gentlemen who had accepted the invitation of the Council to act as judges at the Oxford meeting, and reported the recommendation of the committee that they be now elected. This report was adopted.

EDUCATION.—Mr. Holland (chairman) reported that neither of the candidates who had entered to compete for the Society's certificates and prizes had satisfied the examiners, and that the committee, therefore, could not recommend any award. This report was adopted.

SELECTION.—Mr. Thompson (chairman) reported the recommendation of the committee that Lord Vernon be invited to accept the office of President of the Society for the ensuing year, and that the house list be printed in the usual manner. This report having been adopted, it was moved by Mr. Thompson, seconded by Mr. Dent, M.P., and carried unanimously, "That Lord Vernon be recommended to the general meeting as President for the ensuing year."

HOUSE LIST.—In conformity with the bye-laws the

Council then arranged by ballot the following election list, to be recommended by them for adoption at the ensuing general meeting on the 28rd inst :

ATTENDANCES (FROM THE AUGUST MEETING, IN 1869, TO THE PRESENT TIME).

Names.	Monthly Councils. Total 16.	Special Councils. Total 3.	Com- mittees.	
			Number of Meetings.	Attendances.
Amos, Charles Edwards, 5, Cedar's Road, Clapham Common, Surrey	1	...	24	12
Barthorpe, Nathaniel G., Hacheston, Wickham Market, Suffolk	7	2	4	1
Booth, Thomas Christopher, Warblay, Northallerton, Yorkshire	8	2	30	15
Bowly, Edward, Siddington House, Cirencester, Gloucestershire	9	2	22	8
Clive, George, Perrystone, Ross, Herefordshire	6	...	...	...
Davies, David Reynolds, Mere Old Hall, Knutsford, Cheshire	13	...	42	21
Druce, Joseph, Eynsham, Oxford	13	3	22	11
Edmonds, William John, Southrop, Lechlade, Gloucestershire	8	1	8	3
Gibbs, B. T. Brandreth, Halfmoon Street, Piccadilly, London, W.	14	3	54	52
Hassall, William, Bubney, Whitchurch, Salop	6	1	3	1
Hesketh, Sir T. G., Bart., M.P. (elected Feb. 3, 1869), Rufford Hall, Ormskirk, Lancashire	2	...	...	...
Holland, Edwd., Dumbledon Hall, Evesham, Worcestershire	9	2	74	25
Hornaby, Richard, Spittlegate, Grantham	11	3	34	15
Hoskyns, Chandos W., M.P., Harwood, Ross, Herefordshire	12	3	59	25
Kesteven, Lord, Caswick, Stamford, Lincolnshire	9	2	17	11
Laves, John Bennett, Rothamsted, St. Albans, Herts	5	...	8	1
Lichfield, Earl of (elected Aug. 4, 1869), Shugborough, Staffordshire	6	...	14	4
Macdonald, Sir Arch., Keppel, Bt., Woolmer Lodge, Lilphook, Hants	6	1	11	7
Randell, Charles, Cheshbury, Evesham, Worcestershire	8	1	64	22
Sandby, William, Radcliffe-on-Trent, Nottinghamshire	5	1	38	7
Shuttleworth, Joseph, Hartsholme Hall, Lincoln	9	...	34	17
Statton, Thomas (elected Feb. 3, 1869), Stand Hall, Whitefield, Manchester, Lancashire	7	1	11	8
Welby, William E., M.P., Newton House, Folkingham, Lincolnshire	...	...	...	...
Wells, William, M.P., Holmewood, Peterborough, Northamptonshire	11	1	56	35
Whitehead, Charles (elected Dec. 8, 1869), Barming House, Maidstone, Kent	3	...	...	...

COUNTY MEETING OF 1871.—The report of the committee appointed to inspect the sites offered to the Society by the local authorities of Shrewsbury, Stafford, and Wolverhampton, having been read, the Council were favoured by the attendance of the following gentlemen, as deputations from the competing towns :

Shrewsbury.—Introduced by the Right Hon. Viscount Hill: the Viscount Newport, M.P.; Gen. the Right Hon. Sir Percy Herbert, M.P.; J. R. Ormsby Gore, Esq., M.P.; the Mayor of Shrewsbury (Henry Fenton, Esq.), Edmund Wright, Esq.; Messrs. Thomas Groves, Thomas Southam, Thomas Mansel, William Brewster, and J. Bowen Jones (Town Clerk of Shrewsbury) Hon. Sec.

Stafford.—Introduced by the Right Hon. the Earl of Harrowby: Lord Sandon, M.P.; Captain the Hon. Re-

ginald Talbot, M.P.; Col. Dyott, M.P.; the Mayor of Stafford; W. Blount, Esq.; W. Sylvester, Esq., J.P.; J. Pilling, Esq., Stafford, J.P.; W. H. Gibson, Esq., J.P.; Captain Morgan, H. Woodhouse, Esq., C.E.; F. Greatrex, Esq.; R. Sylvester, Esq.; J. Darlington, Esq., and H. Gillard, Esq., Hon. Sec.

Wolverhampton.—Introduced by the Right Hon. C. P. Villiers, M.P.; the Mayor of Wolverhampton, the Town Clerk, T. M. Weguelin, Esq., M.P.; Sir Jon Morris, W. Fryer, Esq., J.P.; Alderman Ironmonger, Alderman G. L. Underhill, John Moreton, Esq., J.P.; R. H. Masfen, Esq.; Councillor John Lees, Councillor Sollom, and Mr. Barnett.

These gentlemen having laid before the Council the facts and arguments in favour of their respective districts, and having answered the inquiries made of them by the Council, the President expressed to them the thanks of himself and the Council for their interest in the Society, their anxiety to promote its objects, and their kindness in attending the meeting that day.

The deputations having withdrawn, and his Grace the President having vacated the chair on account of an important engagement elsewhere, Lord Tredegar was nominated to preside during the remainder of the meeting.

It was then proposed by Mr. Milward, and seconded by Mr. Jacob Wilson, "That the Council do first decide as between the counties of Salop and Stafford." An amendment was thereupon moved by Mr. Thompson, and seconded by Mr. Wren Hoskyns, "That the voting should be taken for the three towns, and that the decision between the two having the majority of votes should be decided by a second vote." After some discussion, the amendment having the greater number of supporters, the original proposition was withdrawn, and a division taken in accordance with the terms of the amendment, as follows: Shrewsbury (proposed by Lord Hill, and seconded by Sir W. W. Wynn), 17 votes; Stafford (proposed by Mr. Dent, and seconded by Lord Vernon), 1 vote; and Wolverhampton (proposed by Mr. Milward, and seconded by Mr. Baldwin), 22 votes. A second division having been then called for, it was decided, by 18 votes against 13, that the Society's country meeting for 1871 be held at Wolverhampton. It was then moved by Mr. Torr, seconded by Mr. Wren Hoskyns, M.P., and carried unanimously, after some discussion, that the Society's country meeting for the year 1872 be held in the district comprising South Wales and the counties of Gloucester, Worcester, and Hereford.

On the motion of Mr. Thompson, seconded by Mr. Turner, the question of the rotation of districts was referred to a committee, to consist of the Committee of Selection and Lord Tredegar, Mr. Wren Hoskyns, M.P., and Mr. Jacob Wilson.

The draft of the report to be presented to the general meeting was discussed, amended, and ordered to be printed.

Letters were received from Mr. A. Hansen on the cultivation of potatoes, and from the Rev. W. W. Jones, rector of Summerstown (Oxford), in reference to Divine service in the showyard at Oxford, and the latter was referred to the honorary director.

A communication from the Foreign Office, relating to the disease among cattle known as the "Mal de Rate," or splenic disease, which had been received from her Majesty's Minister at Copenhagen, and of which the following is a translation, was referred to Professor Symonds :

"The *mal de rate* is a disease which attacks man equally with other warm-blooded animals. It develops itself spontaneously in herbivores, and is communicated by contagion. The contagious principle is transmitted by the contact of either solid or liquid (blood) particles, or even by eating the

flesh of infected animals; but it is not communicated by the agency of the atmosphere. The malady is especially dangerous in warm climates, and in Southern Europe. In Denmark it is somewhat rare, and only exhibits itself under a mild form (erysipelas), the *anthrax*, or burning scabs (*charbon*), being there nearly unknown. It is there observed only occasionally, in isolated cases, amongst cattle, but is not propagated even in

the herd attacked, and it still more rarely acquires an epidemic character. Within the last few years it has shown itself in pigs, under the form of erysipelas, but without acquiring any great extension. The losses sustained by the country through the *mal de rale* are consequently very insignificant; but this result must be chiefly attributed to the excellence of the measures which have been taken to contend against it."

THE CENTRAL CHAMBER OF AGRICULTURE.

On Tuesday, May 3, the monthly meeting of the council was held, at the Salisbury Hotel, Salisbury-square, Colonel Tomline, M.P., presiding.

A communication was read from the East Kent Chamber, embodying a resolution in favour of assessing to the property and income-tax on the rateable instead of the gross estimated rental. This was referred to the Local Taxation Committee.

Sir MASSY LOPES read the following report from that committee: "The Local Taxation Committee, in presenting their report, beg to state that the executive committee have met regularly since the last general meeting on the 4th April. The committee cannot help expressing their great regret that, owing to the absorbing interest felt in Irish legislation which has hitherto during the session monopolized the time and attention of Parliament, many other important measures are in danger of being indefinitely postponed. They deem it their duty, under such circumstances, to urge upon the chambers the necessity of renewed efforts to obtain from the Legislature a ratification of its promises with respect to local taxation. A special committee of the House of Commons is at present engaged in investigating the subject of local taxation, but the very limited scope of their inquiry precludes your committee from anticipating any very material results from their deliberations. Meanwhile, they will carefully watch the proceedings, and neglect no opportunity of advancing the cause they have in view. Your committee most strongly deprecate the dealing with this important subject in a piecemeal, instead of a comprehensive and statesmanlike, manner. The committee feel that it is all-important that steps should be taken to sustain the public interest in this question, and to arouse a still stronger feeling in favour of a reform. They would, therefore, suggest that at the forthcoming meetings of the Royal Agricultural Society at Oxford, and of the Bath and West of England Society at Taunton, it might be advisable to hold meetings at which the present incidence of local taxation might be discussed, and opinions taken as to the best mode of inducing the Government as promptly as possible to fulfil the pledges which they have repeatedly given with reference to this important matter. The meetings of these societies are numerously attended, and any views expressed there are certain to be widely circulated and considered on their merits. The report went on to acknowledge subscriptions received or promised since the last general meeting.

The report was adopted, and ordered to be printed and circulated; and arrangements made for holding the meetings proposed. It was also agreed that meetings of the council and members of provincial institutions on the subject of local taxation should be held during the week of the Bath and West of England Agricultural Society's Show at Taunton in June, and at the Royal Agricultural Society's Show at Oxford in July, the arrangements with regard to each being left to the Executive Committee of the Council.

The following resolutions were submitted by the Business Committee:

"(1). That this Council repeats its protest against the present unjust Exemption of Personal Property from contributing towards the various objects for which funds are now raised by Local Rates, and challenges investigation into the truth of the assertion that Real Property is compensated for this grievance by bearing a much smaller share of Imperial burdens than Personality."

Mr. STANTIN said, in moving this, that exemptions from any kind of taxation were objectionable; for as Mr. Gladstone had once said the exemption of one man meant the taxation of another. It was also a remark of that right hon. gentleman, however, that it was exceedingly convenient

to be able to put your hand upon personal property, it being visible and easy to be got at. Well, it might no doubt be a convenient proceeding to put one's hand into his neighbour's pocket, but it was nevertheless contrary to all our notions of morality and justice. It was said that real property was compensated in some way or other for the exemptions which were at present given to personality. For example it was said that the farmers' houses were exempted from taxation, and that real property did not contribute its fair share towards the succession duties. These allegations might or might not be true, and if they were at all doubtful, let them be inquired into. If real property did not contribute its fair share towards the public burdens, by all means let additional taxation be placed upon it. If, on the other hand, there were no countervailing charges upon real property, it should be remembered that both in houses and lands, it paid upon the full rack rent value to the income tax, without taking into account the other charges upon that property. The fact was that real property was taxed to the utmost amount of the rack rental and the personal property under schedule D did not contribute upon £57,000,000 a year as stated in the report of the Inland Revenue Commissioners themselves. Again, when real property was transferred an enormous amount had to be paid for stamps; whereas in the case of a transference of personal property a penny stamp would cover any amount. In conclusion, he was of opinion that our system of taxation, imperial and local, was a bungling and complicated system, and that the whole subject required investigation.

Mr. HODGKIN seconded the resolution, and said that in a village in the county of Kent there resided a general shopkeeper, and in the same parish a farmer, both of whom were assessed at the same amount to the income-tax; but for the purposes of the poor-rate the farmer was assessed at £450, whilst the shopkeeper was assessed at only £18. This showed the immense difference there was between the valuation of the property of persons occupying shops and gentlemen employed in agriculture.

The resolution was put and carried unanimously.

Professor BUNN moved the next resolution: "(3) That the order in which the Government have indicated their intention of considering the subject of local taxation is irregular and inexpedient, and that no re-adjustment of the present system will be acceptable which is not preceded by a thorough inquiry to determine whether the objects now locally provided for, or in contemplation (such as the proposed charge for elementary education), are of local or national obligation." This motion, he remarked, came with peculiar force from a chamber which, like this, was constituted of both landlords and tenants. The Government admitted that local taxation pressed hardly upon the tenant, and then they said, "we will examine the question and see what portion of it we can remove from him and put on the landlord." That, however, was not what the Chamber required. What they wanted was that the whole subject of local taxation and of the burdens upon real property should be inquired into; and the question was not whether the owner or the occupier paid them, but whether they were placed upon real property. The fact was that the proposal of the Government was intended to create dissension amongst the classes interested in the land, and thereby to get the thing shelved and out of the way. The question who was to pay the rates, as between the owner and occupier, was one no doubt requiring adjustment, but in itself it was notwithstanding of secondary importance. When it had been settled what rates were to be paid would be time enough to decide who was to pay them.

Mr. TURNER, in seconding the resolution, urged that every

obstacle should be thrown in the way of the Government in imposing additional burdens upon real property that the Chamber could fairly resort to.

Captain CRAIGIE spoke in support of the resolution, and expressed his disappointment at the Chamber having to discuss, not a Government measure, but the absence of one, although they had been assured that Ministers would introduce a scheme for the amelioration of the present state of things. Without having a formal measure before them, however, the Chamber were fully aware of the Ministerial views from the declarations made by the Prime Minister and the President of the Poor Law Board in February last. But, first, what did the Chamber ask for, and how had they been met by the Government? What they wanted was a thorough inquiry into the whole incidence of local taxation before considering the measures necessary for the amendment of the system. In other words, they desired to show where the shoe pinched, and in what direction it would be most statesmen-like to effect reform. In the course of his election tour through Lancashire in October, 1868, Mr. Gladstone called particular attention to the question of local taxation, and admitted that the system of local rates was far from being symmetrical. In February, 1869, too, he told a deputation from this Chamber that he thought the subject entitled to the gravest consideration, and that he was very anxious to assure them that the Government were sensible of the imperative obligation which rested upon them to give their best attention to a matter of such importance. These declarations he had repeated on subsequent occasions. He had then evidently no intention to dismember the subject; and the question in his view was the whole question and not the petty branch of it which had been referred to a select committee of the House of Commons. In the Queen's Speech, moreover, at the opening of the session, the subject constituted the sixth "omnibus," but whilst the horses had been put to all the other "omnibuses" all that could be seen of this was the bare poles. What did the proposals of the Government thus far consist of? They declared that it was necessary to make inquiries, and a select committee had been appointed with the view of finding out some means of effecting legislation in the matter; but the situation was not at all satisfactory, for they had discovered that the question had two branches, a higher and a lower, and that the former was far too high to reach with the information they possessed. Consequently they only contemplated dealing with the latter. This included the extent and influence of rating, the collection of rates, the persons from whom they were to be collected, and the bodies who were to administer them. The last two points had been referred to a select committee. On the others the Government had undertaken to produce measures which, however, had not yet appeared; and he objected to and condemned the order in which these questions were to be treated.

Mr. CORBRANCE, M.P., did not often present himself in the character of a ministerial apology; at the same time he was scarcely able to concur in the remarks of the last speaker, because two years ago he himself had moved for the appointment of a committee similar to the one which was now sitting. He thought then, and still thought, that the first branch of the inquiry must be into the rates as they at present exist, and not as to how they ought to exist. For until they had some more accurate data than they now possessed with regard to what the rates were, on whom they fell, and how their readjustment could be effected, he did not see how a satisfactory conclusion was to be arrived at as to how they were to be arranged, and who ought to bear them. From that point of view, therefore, he thought the committee now sitting were effecting a useful object. He had always considered that the rates were far from being symmetrical, that they were in fact in a sad state of confusion, and the result of the committee inquiries so far had gone to confirm him in that opinion. There were two heads before them, the collection and the administration. The collection was dealt with by Mr. Ayrton's committee last year, so that the committee now sitting need not take evidence upon that point. When they came to the question of administration they would find themselves in some difficulties, for before they could decide who should administer it must be decided upon whom the entire burden should rest. If the rates were divided between owners and occupiers, some plan must be devised for their being equally represented in the administering body. Again, if any portion of the burden

were to be made an Imperial charge, another question which would arise was how far their proceedings should be submitted to the supervision of a Government officer. As to the resolution before the Chamber he could not say that the order in which the Government had indicated their intention to consider the matter was either irregular or inexpedient; but he agreed in thinking that it did not provide a sufficient inquiry into the large subject referred to in the latter part of the resolution.

Sir M. LOPES, M.P., said that the propositions of the Government had not, up to this time, fulfilled the ministerial pledges of last Session: and whatever might be decided with regard to the division of the rates between owners and occupiers, that would not settle the main question at issue, which was, whether or not many rates now local ought not to be treated as imperial; and whether, too, income arising from personal property should be exempted from liability to such rates. For himself he could not agree that the inquiries of the Government were regular. The first point to be investigated should be what rates they ought to pay; and next, who ought to pay them; but the Government had inverted this order of things, and put the cart before the horse. The appointment of the committee rather assumed that the agricultural community were satisfied with the present charges; but he took upon himself to enter his emphatic protest against that. He could not admit for a moment that there was not to be a very great alteration, whereas the appointment of the committee seemed to assume that things ought to be perpetuated in their present state. In his opinion the objects of the Government appeared to be to embarrass the advocates of a change, to postpone this higher branch of the inquiry indefinitely, and to rivet the fetters on agriculture more securely than ever (Hear, hear). They were trying to lead them off the scent. Their proposal was an insidious one, calculated to act detrimentally, and create dissensions between owners and occupiers. It could not effect any diminution of rates, and the same rates would have to be levied on the same property as heretofore (Hear, hear). The first effect of putting half the rates on landlords and half on tenants would be to disturb the existing arrangements between the two classes; and he doubted very much whether the change would be of any advantage to the occupiers. Whether, indeed, owners or occupiers paid, it would make little difference in the long run; it would be simply "Robbing Peter to pay Paul."

Mr. T. BAKER (Somersetshire), as a renting farmer, saw with much regret the proposal to divide the rates between landlord and tenant. The idea prevailed that an evil existed and that investigation was necessary. If as the result of that investigation it turned out that the occupiers did not pay enough, they would sit down and content themselves with being laughed at. But would it benefit them to divide the evil and create a number of squabbles? He did not believe there was a single renting farmer in the country whose opinion was worth anything, who considered that it would be of any advantage whatever. They did not want to see their landlords' burdens augmented, for if that were done the result would be increased rents. What they demanded was that, being taxed to excess, the saddle should be put on the right horse.

The second resolution was then put and agreed to.

Mr. WALKER (Nottinghamshire) proposed the concluding resolution as follows:—" (8) That, although in view of such taxation as must always remain strictly local, it may be advisable to widen the limits of the rateable area by including woods, mines, and Government property, or may be found expedient to charge some portion of the rates on the owner, this Council protests against any such measures being accepted as a settlement of the grievance to which both land and house property are now subjected." He contended that the care of the poor was the duty of the nation and not of the individual; that their support should, therefore, be treated as a national charge. Further, that the suppression of crime should be provided for out of the wealth of the nation. To place the burden entailed by these things upon one sort of property alone, or upon rental, was, therefore, an injustice which tended to increase the number of unemployed and lessen the wages of labour. The only remedy, in his view, was to tax the entire income of the country for these purposes. In no other way could they get a proper rate for the relief of the poor.

Mr. J. TURNER (West Kent) seconded the resolution, and spoke strongly in favour of assessing all personal as well as real property to local rates.

Mr. C. S. READ, M.P., observed that besides woods, mines, and Government property there was another description of property which escaped local taxation, and that was "game." He was quite aware that game itself could not be rated; but in the county of Norfolk, and no doubt in many others, the presence of game upon land depreciated the rent, and consequently the rateable value. He considered it to be essential, therefore, whenever a revision of taxation took place, that land should be assessed at its true value, irrespective of any reservation which the landlord might make, whether in the shape of timber or game. He proposed, then, to insert the words "right of sporting" after "mines."

Mr. SMYTHES seconded the amendment, and observed that when the game was in the hands of the landlord, nothing was paid for it; but if the tenant took it with the land, he was at once rated for it. Than that nothing could be more unfair; and if game were rated at all, the landlord ought to be liable as well as the tenant.

The amendment was supported by Mr. PELL, M.P., who gave the following illustration of the manner in which the present system of rating operated, in so far as it affected game: On a property with which he was acquainted, the shooting, with a small house, was let to an outsider, a gentleman who came from a considerable distance, for £270 a-year. The tenants on that estate had offered to pay £270 a-year extra rent if they might enjoy what attached to their holdings in the shape of the rights of sporting; but he would not say whether the offer had been refused or accepted. If accepted, however, the Assessment Committee could fairly set the hereditaments at a letting value of £270 more than they did when the rights of sporting were let to the stranger, and so the ratepayers of that union would benefit to that extent. But so long as these rights of sporting were let off to an outsider, and separate from the estate, the Assessment Committee could not put the value of the hereditaments at their full and natural amount; thus an additional charge was thrown upon the Union. If then, the amendment to the resolution had legislative force given to it, that anomaly would at once disappear.

Mr. BARROW, M.P., supported the amendment, although he believed that, as the reservation of the right to game was not one of the things that might be deducted, the Assessment Committee might now assess the tenant at the full value. That committee had nothing whatever to do with the arrangements between landlord and tenant; but to remove all doubt on the question he approved of the amendment that the Assessment Committee might assess the land and the rights of sporting separately.

After some remarks from Mr. Masfen, Mr. Startin, and Mr. Arkell, Sir M. LOPES, M.P., observed that he went further even than Mr. Read, and was of opinion that everything ought to be rated; that even Ragged Schools should not be exempted; for if everything were rated, there would be fewer grievances.

Mr. GEORGE ANDREWS spoke hopefully of the progress which the question of local taxation was making in public opinion, and took credit to the Chambers of Agriculture for the present position of the question. It was now upon everybody's lips. It was constantly talked of in every board of guardians. Thanks to the energy, ability, and perseverance of Sir Massey Lopes, it had also been introduced and debated in the House of Commons, where large admissions had been made, and the Premier on behalf of the Government had promised that it should be dealt with in the present session of Parliament; and any one who walked down the corridor of the House of Commons would see a door of one of the committee rooms labelled with the words, "Local Taxation Committee."

Mr. CORRANCE: "Limited" (Loud laughter).

Mr. ANDREWS: This showed, however, that an immense stride had been made by ministers since last year; they refused Sir Massey Lopes a Royal Commission (Hear, hear). Still it seemed to him as if the Government were endeavouring to solve the profound problem of "How not to do it." And they had partly succeeded by discovering that two halves do not make one whole, and that, if you pay your poor-rates, half out of one pocket and half out of the other, you must be greatly relieved. As to the proposal to divide the rates between the landlord and occupier, it was simply absurd; and he was confident that they would not find any number of

intelligent farmers whose opinions were worth anything who would accept the proposition as in any sense a measure of relief.

Mr. H. LINDELL avowed, on the other hand, that although inadequate, he should be prepared to accept such a measure. He was sorry to observe in the members of the Chamber a disposition to disparage the proposals of the Government. There were two distinct branches to the question—one related to the ratepayers as against the public generally, and the other affected peculiarly the ratepayers themselves. The subject had been discussed as if the rate fell entirely upon real property; but it did not. Mr. Andrews' illustration was, no doubt, a forcible one; but if he reflected, he would find that what he took out of one pocket he paid as occupier, and what he took out of the other he paid as owner. What the tenant paid, indeed, must be in respect of his personal property, his exhausted capital employed in cultivation—in short, his stock in trade. As to the question of inequalities amongst ratepayers, the tenant-farmer who paid upon his personal property was rated at his rent, which was very much in excess of—probably nearly double—his income. All other personal property was rated merely at the rent of the house or office occupied, therefore a small proportion of the income. Thus the tenant-farmer paid on twice his income, and the professional man on one-tenth of his. With respect to the division of the rate between owner and occupier, that he thought might be accepted, certainly as inadequate, but not altogether unsatisfactory. It tended to recognise the principle of spreading the rate over all descriptions of property, to define the interests of the landlord, and so far from separating owner and occupier, he believed it would rather bring them together, and conduce to a better and more judicious administration of the rates than at present. The Boards of Guardians were principally composed of occupiers; and the county finance was mainly administered by magistrates. If both funds were administered by magistrates, owners, and occupiers combined, he believed they would be better managed and more decided efforts would be made to reduce the expenditure. He hoped, therefore, the Chamber would not altogether reject the advantages which the Government were prepared to offer, but accept them, as, if inadequate, not utterly unsatisfactory.

Sir G. JENKINSON condemned Mr. Read's amendment respecting the assessment of sporting rights as a "monstrous proposition," because it would interdict the country gentlemen from living on his own estate and encourage absenteeism.

Major PAGET thought there was considerable danger of the Government proposal drawing away people's minds from the real question. It was like asking an architect to repair and alter windows in the top storey of a house of which the foundations were rotten. It began, in fact, at the wrong end. True it might prove on investigation that the division of the rates between owner and occupier would be absolutely light and advantageous; but at the present moment with the rate existing as it was, he deemed it unadvisable, and intended to check the useful agitation in which the Chambers of Agriculture were engaged, and which seemed to hold out some hope of realising good fruit. At all events any settlement until the area of the rate had been extended would not satisfy him.

The amendment of Mr. Read to insert the words "rights of sporting," was then put and negatived.

Sir G. JENKINSON proposed as an amendment "That, although in view of such taxation as must always remain strictly local taxation, it is undoubtedly advisable to widen the limits of the rateable area, by including woods, mines, and Government property, as proposed by the Government, and even supposing it to be not expedient also to charge some portions of the rates on the owner, nevertheless this Council still rules their protest against any such measures, taken alone, being accepted as a settlement of the grievance to which both land and house property are now subject, and which grievance will remain a standing injustice until all property is made to contribute a fair share towards local taxation."

The amendment, which Sir George admitted was in its essence an echo of the original motion, only "marking the sense of the Chamber a little more strongly," was seconded by Mr. WEBB, opposed by Mr. READ and Mr. PELL, and ultimately rejected.

The original resolution was then agreed to; and on the motion of Mr. D. LONG, seconded by Captain CRAIGIE, the resolutions adopted by the Chamber were directed to be submitted to the Government.

The discussion of the Education Bill, which stood adjourned from the last meeting of the Council was further adjourned until the meeting in June, at the instance of Professor BUND. Mr. C. S. READ proposed the following petition to the House of Commons on the subject of game certificates and game licences. "That your petitioners are extensively engaged and interested in agriculture, and are obliged to use guns for the protection of their crops from the ravages of birds and vermin; that your petitioners consider it undesirable to abolish the existing duty on game certification, and that the proposal to charge with the cost of a licence those who are compelled to use firearms in the prosecution of their important business on the same scale as those carrying guns for sporting purposes is unreasonable and unjust; and your petitioners, therefore, pray that the duty on game certificates may be retained, and that the contemplated exemption in favour of firearms kept within the house be extended to those used upon the land and premises in the occupation of the owner of such guns." The proposal of the Government to impose a duty on guns was, in his (Mr. Read's) opinion, an open question with which the Chamber need not meddle; but they might make a respectful protest against throwing away £150,000 a year which he had never yet heard anybody complain of. The game certificates were paid for by a class of men who could well afford it, and who did not complain of it as an unnecessary burden upon them. The exemption asked by the petition was precisely in the same direction as the exemption which the Chancellor of the Exchequer had submitted to the House; that was to say, when guns were kept in a house, and within the curtilage thereof; and if it was necessary to protect the house with these firearms, surely it was equally or even still more necessary for farmers to have a gun for the protection of their growing crops (Hear, hear). If they had this exemption, and there was also a tax upon guns, it would perhaps stop what it was supposed necessary to stop, the constant

popping at small birds upon roads by cockneys and other sportsmen, who, instead of hitting the birds, were more likely to hit themselves or somebody else; it would not only prevent accidents but might be the means of bringing in a considerable revenue. The Norfolk Chamber of Agriculture had submitted to the Chancellor of the Exchequer a memorial almost identical with this petition, except that it stated that if it should be thought right to impose a tax upon fire-arms they considered it would be better to charge so much per barrel of every gun and so much for chamber of every revolver. So far as this Chamber was concerned, however, he thought they should attend more especially to the subject as it affected them as farmers; and if possible get the exemption which Mr. Lowe had himself intimated it would be well to give extended still further in the direction now proposed.

Mr. T. WILLSON having seconded the motion, after a short conversation it was put and agreed to.

At the instance of Mr. T. HORLEY, junior, seconded by Mr. D. LONG, a petition was also adopted against the abolition of hawkers' licences; a measure which was condemned as a cloak for vagrancy, a temptation to servants to rob their employers, and a means of disposing of stolen property.

Mr. J. J. BURBERRY in calling attention to the Coroner's Bill introduced by Mr. Goldney, the member for Chippenham, which provides a superannuation allowance for coroners, stated the objection of the Warwickshire Chamber to the measure. That Chamber, he said, did not see the necessity for any such allowance, and particularly they objected to its being paid out of the county rate.

Mr. READ suggested that the chairman might take an opportunity of saying a word or two against the bill in the House of Commons, when it came on for discussion there; and

Col. TOMLINE having intimated that he would consult Mr. Goldney on the subject, the matter dropped, and the Chamber separated after passing a vote of thanks to the Chairman.

THE GAME LAWS.

At a meeting of the Hampshire Chamber of Agriculture at Fordingbridge, Mr. W. W. B. Beach, M.P., in the chair, Mr. Ridley read a paper on this subject. In the discussion that followed,

Mr. HANNEN, as neither a farmer nor sportsman, but an estate agent, thought the farmers in that parish had nothing to complain of in respect to game. The system adopted there worked very well, he thought, and to deprive gentlemen of sport would, he thought, be one of the greatest evils that could befall this country by driving the aristocracy out of it. If the farmers had the right to the ground game, he thought they would have little to complain of, nor did he think they would object to keep up a good amount of winged game for the enjoyment of their landlords, and if farmers pressed the matter a little more closely he thought they would secure the right to kill rabbits, and perhaps hares too. In that neighbourhood they reserved the game on the farms they let, and the landowner not being a sportsman, he let the shooting to the Most Noble the Marquis of Anglesey (loud cries of "oh"). He believed that all spoke well of him as a nobleman and a sportsman. If he allowed the tenant to be overstocked, the tenant had at once to complain to the speaker, and he gave the Marquis notice, and if he failed to reduce it the tenant had the right to kill. This had worked so satisfactorily that for ten years he had never a case of complaint from a tenant, and if that course was adopted more generally throughout the country he thought these questions would be avoided. He thought game should be assessed to the poor, and bear its fair share of the burdens on the land, and he thought proprietors would not object to it.

Mr. TRASK thought they must be in a peculiarly happy state in that neighbourhood. Although he was happy to bear testimony to the general high principle of land agents, he would not take the word of one of them in this matter of game (loud cheers). It was perfectly true that the law gave the game to the tenants, but what gentlemen owning large estates offered them without reserving to themselves the game, thus practically upsetting the law? As the Most Noble had

been mentioned, he could only say that he had had some experience respecting him, and he pitied any man who had a farm of which the Most Noble had the game (loud cheers). He had the shooting over about 2,000 acres which the speaker held, and he was obliged to go to the agent, and was bound to have permission and kill because the Most Noble would not.

Mr. HANNEN was glad that they were better off.

Mr. TRASK said he had already told them they were peculiarly happy. It appeared to him that the proposal to make game property would be found to be rather difficult in practice, and he fancied if the winged game were given to the landlord and the ground game to the tenant satisfaction might result. Without some such plan—the tenant having the sole right to do what he would with the hares and rabbits—he did not think they would arrive at a satisfactory solution of the question (cheers).

Mr. RIDLEY moved—"That, in the opinion of this Chamber, the time has arrived when, in consequence of the completely altered circumstances of the country, some means should be adopted for checking the great evil of the over-preservation of game."

This Mr. SPOONER seconded, and on its being put to the meeting it was carried.

Mr. TRASK proposed—"That this Chamber is further of opinion that in any future legislation ground game should be declared to be the property of the tenant, and winged game that of the landlord, any agreement to the contrary notwithstanding."

Mr. BENNET seconded this motion, and it was carried, three hands only being held up against it.

The CHAIRMAN confessed he could not quite accede to Mr. Trask's resolution, because, in his opinion, it was a violation of the contract entered into between landlord and tenant, though he was not surprised that there was a very strong expression of opinion on the subject, for the evil was very great, and required checking by some strong and authoritative means.

"SADDLE AND SIRLOIN."*

[FROM THE TIMES.]

Our agricultural and sporting readers will pardon us, we are sure, if before attempting to give a sketch of the contents of *Saddle and Sirloin*, we say a few words concerning the author, who quitted this world on the 16th of March last, at the age of 47, after a most laborious and indefatigable literary career. Mr. Henry Hall Dixon, better known under his pseudonym of "the Druid," was a native of Cumberland, and was educated at Rugby and Trinity College, Cambridge, at both of which places his natural genius and his untiring industry would have probably gained him high honours, but for the persistent ill-health which pursued him from childhood to the hour of dissolution. Upon quitting the University he read for the law, and was subsequently called to the Bar, but after receiving a few briefs he ceased to pursue the profession, although his book on the *Law of the Farm*, which is regarded, especially in the northern counties, as an invaluable compendium, sufficiently proves the solidity of his legal acquirements. From his earliest years he took an intense interest in all domestic animals, but his fondest worship was reserved for the noblest of all the creatures which are devoted to the service of man—namely, the horse. His enthusiasm in this direction is attested by the various scarlet-covered volumes which he published, such as the *Post and the Paddock*, *Silk and Scarlet*, *Scott and Setright*, in all of which the British horse appears as the grand central figure, surrounded by an attendant body of satellites, trainers and jockeys, huntmen and masters of hounds. As a proof of the purity of Mr. Dixon's equine enthusiasm, we may observe that he never made a bet in his life. Beside the above works, he wrote an immense variety of articles on sporting subjects in numerous magazines and newspapers. To the readers whom we are now addressing, "The Druid's" quaint, terse, original style is well known, and perhaps it was never better exemplified than in his biography of the Marquis of Hastings, transferred to these columns. Of late years Mr. Dixon's sporting enthusiasm somewhat cooled, and he devoted all his energies to subjects more exclusively agricultural. He wrote a series of articles on celebrated English herds in the *Mark Lane Express*, and then made a three years' tour in Scotland for a similar purpose. The greater part of this journey was performed on horseback, and often in the most inclement weather, and the hardships which he underwent induced the illness which terminated his laborious career. The volume now before us, *Saddle and Sirloin*, treats of similar experiences in Northern England.

Scattered up and down the pages, and especially in the footnotes of *Saddle and Sirloin* there is a large amount of technical information, which will be of much value to breeders of stock; but we shall refrain from looking at the book in this aspect; we shall regard it rather in the light of a picture gallery, abounding in faithfully-sketched portraits of quaint and interesting characters. At the opening of his volume, Mr. Dixon still lingers on the Scottish side of the Border, evidently reluctant to quit the Land o' Cakes, and pauses to tell us some new anecdotes of Mr. Campbell of Dalgig, famous for his coursing dogs, and for the strange names which he gave them. Being annoyed to find that other coursing men in various parts of the island unintentionally gave their dogs the same names as his, he determined to avoid all confusion by inventing an entirely original nomenclature, and such words as Coomerango, Canaradzo, and Coodareens attest his talent in this direction. He was wont to take much pains over the manufacture, and said that it often relieved him from severe fits of toothache. Mr. Campbell preserved an old-fashioned hospitality towards the beggars and tramps who wandered across the adjacent moors to Dalgig. They were always provided with a night's shelter and plenty of porridge and milk. The host made a point of asking each of them his name, and

strangely enough it always proved to be Campbell. His generosity caused him to be very popular among the traveling fraternity. A fellow was once overheard saying to his child behind a hedge, "Nab what you can, laddie, but no at Dalgig for yer life." On one occasion two married couples who had enjoyed his hospitality from Saturday till Monday, occupied their barn leisure in negotiating an exchange of wives. The arrangement was carried into effect, and "old Dalgig" was so scandalized when he heard of it that for a long time he housed no beggars but aged ones. Readers of *Field and Fern* have already met Dr. Grant of Hawick, the master of the Terriodale, so we will merely direct their attention to a spirited description of his encounter with an otter related in the present volume, and pass on to a characteristic sketch of the late Lord Glasgow. He went to sea at a tender age, and never lost the salt flavour. After he settled to life on shore he soon began to "plunge," winning or losing his tens of thousands with the utmost coolness. "Be the issue what it might, no one could tell by his features whether he had won or lost." This stoical indifference is always commended by turf memoir writers. "Combined with all his off-hand daring," says Mr. Dixon, "there was the fine simple faith of a Jack Tar, and the most rugged honesty." His personal appearance is amazingly described:—

"He never appeared in such modern knick-knacks as knickerbockers. To the last he stood by the side of the cork, with low shoes a world too wide, white trousers in which T.P. Cook himself could have conscientiously danced a hornpipe, and not unfrequently in a blue coat with gilt buttons. See him when you might there was the same nervous irritation which ruined all natural rest, and made his span of nearly 77 years, eked out as it was nightly by chloroform or laudanum, very little short of miraculous."

Mr. Dixon goes on to style his Lordship "a grand Turf patriarch whom no defeat could quench," and says that "he had spent hundreds of thousands during nearly half a century of racing life."

There can be no doubt that Lord Glasgow was one of those sportsmen who by his straightforward conduct tended to keep Turf morality from sinking into that abyss of degradation from which Sir Joseph Hawley is now striving to rescue it; but we hope that the improved aspirations of some future generation will regard such a career as utterly unworthy of a wealthy nobleman. A man with £60,000 a year might, without wasting a penny of his substance, do so much good among his fellow men that it excites, or ought to excite, a feeling of indignation to see him descending into a gambling arena, where, if he does not cheat, he is sure to be cheated. The best thing we read about Lord Glasgow is that he once fed half Paisley in a time of distress, and we commend the fact to the attention of those noblemen and gentlemen who, while emulating Mr. Wright in their gambling transactions at Tattersall's (without incurring Mr. Wright's punishment), never found time to drop a sixpence into the contribution-box of St. George's Hospital.

With far higher interest we turn to the portrait of the late Sir James Graham of Netherby, a fine specimen, both physically and mentally, of the old Border lineage. Mr. Dixon naturally views him rather as a country gentleman than as a Cabinet Minister. He was an enterprising landlord, road-making, draining, building, and tree-planting with great energy. As a significant fact of the change that has come over Border farming, Mr. Dixon tells us that in the old Netherby leases, dated before 1824, sheep were prohibited because they destroyed the fences. No county in England excels Cumberland in manly beauty, and few Cumbrians could compete in this respect with Sir James Graham. Mr. Dixon cannot recall a finer election sight than when Sir James and Mr. Blamire were borne, side by side, through Carlisle, one in a dark blue, and the other in a light-blue chair; and old Carlisle inhabitants still recollect how in a ball-room the dancers would cease their movements, and crowd round to look on at

* "Saddle and Sirloin; or, English Farm and Sporting Worthies," by "The Druid" (H. H. Dixon). London: Rogers and Tuxford. 1870.

quadrille in which Sir James and Lady Graham, Sir Frederick and Lady Vane, Mr. and Mrs. Johnson, of Walton House, Captain Campbell, and the present Duchess of Somerset formed a rare assemblage of comeliness.

Mr. Dixon's next reminiscence is of a cricket match in the old days at Carlisle, between the 34th Regiment and the county. He graphically narrates how Private Allen, a splendid batsman, but rather a disorderly soldier, was taken out of the Black Hole to play, and how Colonel Lowther delivered his slow round-handers. Colonel Lowther, who died in 1866, is another north-country worthy well deserving of commemoration. In his youth he saw active service in the Peninsula, under Sir John Moore and the Duke. During the retreat of Corunna he was exposed to sleet and snow for nearly 16 days without shelter, and on one occasion he rode a horse 80 miles with despatches without either change or rest. Afterwards he became field-master of the Cottesmore hounds. He was a rare sportsman, and never fell in with the modern style of hunting; loving, like Sir Charles Knightley, to see hounds puzzle it out without being over-ridden. Not the least wonderful of his achievements is the fact that he sat for fifty-five years in Parliament (he became father of the House after Lord Palmerston's death), and yet his speeches during the whole period would not fill two columns of an ordinary newspaper. Sir James Graham described his politics as of the "old long-horned breed."

Compensation is a law of nature: every improvement brings its drawbacks with it, and railways, in exchange for speed and comfort, have robbed us of a world of picturesque-ness. Mr. Dixon sadly contrasts the modern assizes in Carlisle, where the judges descend from their first-class carriages, and robe in the waiting-room, with the olden meeting of the judges, when they approached from Newcastle, heralded by a cloud of barristers in post-chaises, were met in state by the sheriffs and their *poore comitalus*, and lunched and robed at a farm-house six miles out of the city. This part of Mr. Dixon's book abounds in characteristic anecdotes. Speaking of the endurance of the postboys, he tells us how Jack Story of the Crown, at Penrith, once rode at a pinch 108 miles—twice to Carlisle and back, and once to Keswick—in a day, when he was past 70. Here is another reminiscence of the old Crown Inn. Some barristers dining there were shocked to discover that the wild ducks, contrary to all gastronomic precedent, had been stuffed with sage and onions. The ruler of the feast indignantly rang for a kettle of water, scooped out the birds' interiors, and sent them down to be re-dressed. The waiter afterwards bade the cook be of good cheer, informing her that the legal gentlemen, in spite of their delicate appetites, had eaten all the ejected stuffing and a small loaf of bread along with it. Jemmy Anderson was another character among the post-boys. He was once driving a carriage between Shap and Penrith, when the hirer roared out, "Postillion, I shan't give you a farthing for your horses or yourself; you've driven like a snail." Jemmy quietly replied, "You won't pay me a farthing, won't you? Then I've come far enough for now," and, swiftly descending, began to take out his horses. The offending passenger had to pay down a handsome *douceur* before Jemmy would consent to put them in again. A south-country postboy here deserves a word of remembrance—namely, Tom King, of Amerham, who once drove "Farmer George," after hunting with the Royal stag-hounds, from Amerham to Windsor. Tom always kept the anniversary of that day as a close holiday. And how do our readers suppose he kept holiday? By sitting all day in the very seat occupied by his sovereign in that identical yellow post-chaise, playing "God save the King" on his key bangle, and refreshing himself with occasional pulls at a pot of ale and a pipe of tobacco.

Mr. Dixon has some curious information on the subject of the Greta-green runaway marriages, the abolition of which, by the way, was a grievous blow to the sentimental novelists. As the post-horse tariff grew higher and higher the nearer the lovers approached the goal, the post-boys established a sort of private clearing-house, so that all who aided in conveying the happy pair were equally remunerated: A certain post-boy, named Jack Ainalie, stationed at Carlisle, was a famous ally to eloping couples. He was perpetually signing his name as witness to marriages; and "to have him," says Mr. Dixon, "in his yellow cord jacket, on the near-wheeler, was worth as many points to the lovers as it

was to an attorney for the plaintiff to retain Garrow or Pollett. If he was pushed hard, Jack knew of cunning by-lanes and woods to hide them in, and had lines of gates across farms, and all that sort of geography, in his eye, for an emergency."

Our author next indulges in some north-country coaching reminiscences. The new generation who fly from Preston to Carlisle in half-an-hour can have no conception of the wearisome journey by coach on a snowy winter's night across Shap Fells and Stainmoor. Coachman, guard, and passengers battled along in the blast, or bore a hand with the snow-shovels, and then looked out anxiously for that tavern sign of "Welcome into Cumberland," which told of deliverance from the wilds of Westmoreland, and that snug little Penrith was nigh. Here is a specimen of the ordinary misadventures of those days:—

"The coachman had not only to gallop at all the snow-drifts but to put a post-boy and pair on in front. The pole-hook broke, and the hand of Jim Burns, the guard, was almost frozen to the screw-wrench, when he brought out a spare pole-hook and fastened it on. The snow fell in flakes large enough to blind them, and the only comic bit was the voice of a heavy swell issuing from beneath a perfect tortoiseshell covering of capes and furs on the box-seat, 'What are you fellows keeping me here in the cold for, and warming your own hands at the lamp?'"

Then we are told of Parson Bird, a famous amateur driver, who was such a good-hearted fellow, that when the regular coachman from Keswick to Kendal broke his leg he took his place for six weeks, and collected the fees for him. A lady gave the parson half-a-crown, and going to a ball at Kendal that night, was introduced to her coachman of the morning, who at once asked her to dance. She was highly indignant, but on the matter being explained to her she grew so gracious over it that she ultimately became Mrs. Bird.

We must pass by a great deal of information about the coachmen, their incomes, their various idiosyncracies, and their mode of managing sulky horses, and content ourselves by alluding to another old-world source of excitement of which the electric telegraph has effectually deprived us—we mean the competition between the newspapers to supply the latest intelligence when exciting events were going on. For example, when Sir Robert Peel spoke at Glasgow, the outer form of the *Sun* was printed off and taken down to Kendal, where the reporters from Glasgow met it, with their speech notes all ready written out. The inner form was printed off there, and thus the people in Glasgow read the speech printed in a London paper before it had time to reach London. When Bolam was tried for murder, one London reporter left Newcastle by the rail without the verdict, while another waited for it, and caught up the mail by hard galloping, after bribing the post-boys to hold their tongues. The two reporters went on side by side all the way to London, but the last comer never disclosed his precious secret.

From feats of coachmanship Mr. Dixon turns to the Turf, and gives us some lively sketches of the race meetings in former days on Carlisle Swifts, when Mr. Daley, a good-natured Irishman, was clerk of the course. Mr. Daley had been a professional actor in his youth, and still "took to the hare-foot," as our author expresses it, when any good local cause required a benefit. In this connexion Mr. Dixon recalls a well-remembered Carlisle anecdote of a certain gentleman more devoted to sporting than polemics, who, after listening over his pipe for fully six weeks to discussions about Lord John's famous "Durham Letter," asked a friend in confidence "Whose this 'ere Colonel Wiseman they've been a talkin' about?" Next we have a careful account of Cumberland wrestling, with a list of the winners of the All Weights wrestling for the last 40 years. The catalogue opens with Robinson of Renwick, and closes with Jameson of Penrith, who has just been trying his conclusions with a famous French athlete at the Agricultural Hall. North-country wrestling is a much gentler and more scientific sport than the rude play of Devonshire and Cornwall, where kicking is permitted, and where the blood of the combatants is consequently apt to wax savage. Here is a specimen of a west-country challenge from Abraham Cann, a noted proficient:

"Polkinghorne, I will take off my stockings and play bare-legged with you, and you may have two of the hardest and heaviest shoes you like that can be made of leather in the county of Cornwall, and you shall be allowed to stuff yourself

as high as the armpits, to any extent not exceeding the size a Cornish pack of wool, and I will further engage not to kick you if you do not kick me."

There is a West Cumberland pig-enthusiast who nearly equals Campbell of Dalgig in his eccentric nomenclature. A prize pen of three sows at the Carlisle show were labelled "Faith, Hope, and Charity." "And pray which of these three is Charity?" asked an old lady. "Which is Charity, Marm?" said the attendant, "of course the biggest on 'em is Charity." "My dears," said the old lady, turning to her daughters, "I never saw it just put in that practical way before." Another trio were severally labelled "We—Shall—Win." An opponent lapsed into vulgarity when he christened his triplet of pork "Aint—We—Stunners?"

Next we have an interesting dissertation on a peculiar breed of sheep called the Herdwicks, which are confined to Cumberland, Westmoreland, and the northern extremity of Lancashire. Tradition reports that their progenitors swam ashore from a Spanish ship wrecked in Morecambe Bay. Their nimbleness and hardihood fit them admirably for the scant pastures of a wild rugged country, with a bleak and stormy climate. In spite of their agility many of them tumble over the crags, but when they survive such perils they have been known to live to eighteen, and even beyond. Their great merit lies in their ability to tide through the severest winters. "Sometimes they are so snowed up on the hill-side that it is impossible to get at them, and they can do little more than scratch for a bit of dead bracken. In a storm they are excellent generals, forming themselves into solid squares on the most exposed part of the hill until it sweeps past, and then trying to trample down the snow by a combined movement." They need to be hardy, for winter begins about Martinmas and it is often the middle of June before the first bite of grass is ready. On the higher fells the ewes have no lambs until they are three years old.

Mr. Dixon displays an amusing affection for the Newcastle and Carlisle Railway, on account of its venerable age and other peculiarities. It is one of the oldest lines in existence between two important towns; there are no express trains; every train, bar one, stops at every station, and does its punctual 20 miles an hour. For years its up and down trains ran on the reverse side to every other railway. Lastly, it engaged as its guards and porters the coachmen and guards whom it had thrown out of work, and allowed them to wear white hats and scarlet coats. "A neighbouring railway elected a policeman with a wooden leg, but our old friend was not to be outdone, as it had, years before, selected a man with no legs as station-master, and when the train arrived he rode about the Blaydon platform on a donkey collecting the tickets." Eccentric characters abound in this region. When John Hodgson, the parish clerk of Wetheral, applied to the railway directors for a gate-keeper's place, he took care to remind them of his professional *status* by writing thus, "I and my stout sons can not only keep, but carry the gates; yea, even the gates of Gaza."

Mr. Dixon supplies some interesting details concerning John Grey, of Dilston, of whose career a notice has recently appeared in this journal. "To sit with the fine old man," he says, "was indeed like 'converse with Old Time,' but we only once had that happiness, and although we often corresponded, we never met again. It was something even for that short space to quarry in such a rich mine of thought and experience." A vignette of John Grey's noble head fittingly adorns Mr. Dixon's title-page. Then we have an amusing sketch of Lord Althorpe, who cared nothing for politics in comparison with his shorthorns. Like John Law, of Mississippi notoriety, who kept a whole *posse* of Parisian notables in his ante-chamber while he dictated a letter to his gardener in Scotland about planting cabbages, Lord Althorpe always welcomed an agricultural visitor in Downing-street. Recognizing John Grey, of Dilston, the messenger said with a little dry laugh, "You've come about the cows, sir, so you'll not have to wait long." And sure enough he finds the Minister with his herdbook before him. "There's a letter from Carnegie," says his lordship, as Grey enters; "he admires my political course, and he writes from the Lothians to say I shall have the first refusal of his bull. I've written to thank him for his political confidence, but I've told him there's a flaw in his bull's pedigree." Of course Mr. Dixon pays a visit to the famous herd of wild cattle at Chillingham. He says:

"Their sense of smell is exceedingly acute, and a cow has been seen to run a man's foot like a sleuth hound, when he has run for his life to a tree. While Sir Edwin Landseer was taking sketches for his celebrated picture, the herd went into action, and he was glad to fly to the forest as they passed by."

We have not said a word about Shorthorns, although they form the main topic of Mr. Dixon's book, and when he is discussing famous breeders now departed, his style rises to a lofty yet chastened eloquence. Thus of Mr. Bates he writes:

"His heart was with horn and hoof to the last, and there was no 'cruel Phyllis' to cross him in *that* love. Those who have strolled with him in his pastures can recall how the cows and even the young heifers would lick his hand and seem to listen to every gentle word and keen comment, as if they penetrated its import; and even when the last struggle was nigh, and he could wander among them no more, he reclined on some straw in the cowhouse, that his eye might not lack its solace."

And how solemn are the enthusiastic breeder's words when, speaking of one of his best "Duchesses," he says to Lord Althorpe, "The destiny of Shorthorns depends on this calf—this slender thread of a calf." Lastly Mr. Dixon sums up his character with the dignified impartiality of a Hume:

"To dairy properties, a thing too often overlooked, he paid great attention, and very few of his cows were deficient in this respect. He was a man of warm feelings, and either a strong friend or a bitter enemy. Though most acute and observing, he was liable to prejudice, and a splendid dogmatizer, but none have left a more decided mark on our Shorthorn history."

We have not as yet got more than a third of the way through Mr. Dixon's portrait gallery, but our limits forbid us to travel any further. We can only tell our readers that they will find plenty of entertainment as well as solid information in his pages, and we especially recommend his life-like portraits of such men as John Osborne, John Jackson, Sir Tatton Sykes, Mr. Gully, and Thomas Godwin. Well worthy, too, of attention are his sketches of Mr. Waterton, the naturalist, at home; of Cheshire cheese-making, and the trials it has undergone through the cattle plague; and of the great agricultural implement factories at Boston and Lincoln. We shall look forward with interest to the succeeding volume on the southern division of the kingdom, which was being carefully prepared by its author within a few days of his death.

CULTIVATION OF BEET-ROOT IN IRELAND.—

A letter, giving the result of some experiments in beet-root cultivation, has been addressed to the *Kilkenny Moderator* by the Hon. L. Agar Ellis, M.P. Mr. Duncan, of Mincing-lane, London, having sent him some sugar-beet seed last spring, he had it sown in different localities in the county of Kilkenny, and the roots when grown were sent to Professor Voelcker, who made an analysis of their constituents. The crops were sown under unfavourable circumstances incidental to a first experiment. It is necessary that the soil should be heaped up to the top of the root in order to preserve its saccharine properties. A considerable portion of the sugar is lost by exposure to the atmosphere. The proper weight of the roots is from 2½ lbs. to 3 lbs. Some useful information upon this and other points connected with the treatment of the crop are given in the letter. Sugar-beet is pronounced to be the least exhaustive of all root crops, provided the refuse pulp is consumed by live stock on the farm. The white Silesian beet is considered the best for this country. The result of the experiments in Kilkenny establishes the fact that sugar-beet can be grown in the county of a quality which will remunerate the manufacturer. It is calculated that a proportion of 8·5 of crystallizable sugar will pay, and in some instances comprised within the range of experiments there was a yield of 10·91 and of 8·94. Mr. Ellis observes, that to make the crop worth growing, either the present sugar-refiners of Ireland must put up machinery for "converting" it, or different districts must erect the necessary works. The climate of the south-east of Ireland is suitable for the growth of such a crop. Some years ago the manufacture of beet-root sugar was attempted at Mountmellick, but, owing to explainable causes, the speculation failed. There is an opportunity now of renewing the effort to establish this branch of agricultural manufacture under more favourable conditions.

THE LORD ADVOCATE'S GAME BILL.

At a special general meeting of the Haddington Farmers' Club, Mr. SCOT-SKIRVING, the Chairman, stated that the meeting had been called for the purpose of discussing the Game-laws and the Game Bills before Parliament. Of the bills before Parliament, by far the most prominent was the bill brought before the House of Commons by the Lord Advocate. In regard to this bill, he felt no hesitation and no difficulty in expressing what he had to say, and he believed that the meeting would be unanimous on the subject. When he first saw that bill, which appeared alone in the congenial pages of the *Scotsman*, and read it, he became more and more convinced that he was reading a hoax. He did not know whether the editor was hoaxed, but he knew that the public were hoaxed, by one of the most ridiculous bills that ever was framed. There were some stories about old friends with new faces; but this was an old bill with an old face. It was Lord Elcho's bill—the bill which his friends so deeply regretted, but which had at least the excuse that it was a bill proposed by a private member—a bill to assimilate the laws of Scotland to those of England, and place the tenant in as auspicious circumstances as he could be in making a bargain with his landlord. Lord Elcho's bill had been before the country for a great many years; it had been discussed again and again by almost every agricultural society in Scotland, and he believed it had been unanimously condemned by the whole. This being the case, he confessed he was astonished on finding that this bill of the Lord Advocate, which appeared in the *Scotsman*, was no hoax. It appeared to him very much as if the Lord Advocate said something like this: "Here is a bill for you, and if you do not like the bill you may go to—he would not say the devil—but the law." And what way were they to go to law? not by arbitration to the Sheriff; but it seemed as if the Lord Advocate wished to show grace to the briefless barristers he had left behind him. If a large farmer suffered damages to the extent of £300 or £300, and chose to restrict it to £25, he might bring the matter before the Sheriff; but if the sum was £50, he must go to the House of Parliament at Edinburgh, and then, he presumed, to the House of Lords. He believed he might say that had as present circumstances were, the Lord Advocate's bill would make them worse should it come upon them, and he moved that the Club should petition against the bill *in toto*. Briefly referring to Mr. Loch's bill, he said he would not advocate it that day, but he thought it the best.

Mr. SHEPHERD (Gleghornie) seconded the motion, saying that he had no hesitation in agreeing with every word which had been uttered by the chairman in regard to the Lord Advocate's bill. He disagreed with that bill as cordially as their chairman could do. He thought that it was an extraordinary thing that the bill which was so unanimously rejected in Lord Elcho's name should have been introduced by this man, who had the vanity to suppose that it would be accepted in his name. He (the Lord Advocate) seemed to have got giddy with conceit at the height to which he had got up. He (Mr. Shepherd) had no doubt that over Scotland the bill would be disapproved. Lately they had received plenty of advice from the various departments of the press. From the editor of the *Scotsman* they received abundance of advice. No later than yesterday, he had stated distinctly that he did not see how landlords could tyrannise over tenants by means of the Game-laws. There was nobody so blind as those who would not see, and he thought the editor had been winking very hard yesterday when he wrote that. He (the editor) further told them that legislation could do nothing, and he begged leave to say that he agreed with the editor very much. He said that settlements and arrangements between landlords and tenants should be everything, and he agreed with him there. Mr. Russel of the *Scotsman* had long been telling them, as he had been saying, that legislation could do no good, and that the removal of the Game-laws could do no good. It might be invidious to quote the words which he had uttered years ago in criticising a pamphlet written by himself (Mr. Shepherd) upon the Game-laws; but he held

that since that time the editor had changed his opinions upon the subject. They had had a great deal of writing from him lately, but he thought it was a great pity they had to mourn over the change in Mr. Russel, who had taken up a position very much against the tenant-farmer.

Mr. ELDER (Bearford) thought there could be no doubt about the fact that there was a desire on the part of farmers in Scotland to see this game question settled, and if the landlords would only show a corresponding desire they would very soon see an end of this game agitation. But if there was to be a settlement of the game question at the present time, he thought it must be of the nature of a compromise. On the one hand they must not ask too much, because they would not get it; and, on the other hand, the landlords would not require to be too tenacious of their privileges, but give way to their reasonable demand. The farmers must recollect that the House of Commons was composed of men many of whom were game-preservers themselves. On the other hand, farmers must recollect that there was such a thing as public opinion, which sometimes could bring the House of Commons to reason. But what he thought would be a fair settlement of this game question would be for the tenant to get full control over the ground game, leaving the winged game to the landlord. It was hares and rabbits which did the damage, and if the tenant had the power to keep these animals in check, he did not think they would complain about partridges. What he would say was this: Get the landlords by all means to give the tenants some interest in game, and they would never have cause to rue it; not only would they find hares and rabbits enough to do their turn, but they would get plenty of partridges. If the tenant had an interest in the game it would go a long way to put an end to poaching. As to the Government Game Bill, he considered it would do them very little good, and he thought it did not deserve the support of the club. The bill proposed to assimilate the game laws of Scotland to those of England, but he thought it was the duty of any Legislature, when they sought to adopt a law from another country, to go into that country and inquire how the law they sought to adopt had wrought. If the English farmers were no worse, at least he thought they were no better, than the farmers of Scotland; but so great was the competition for land now-a-days that they would get men to sign almost anything, so that virtually they might put anything on the law; it was not worth one rap. As to the clauses of the Government bill relating to damages, he disapproved of them, and thought the bill was not one they should support.

Mr. HOPE (Fentonbarns) was very much disappointed and not a little ashamed of the Game bill which had been produced by the Lord Advocate of the Liberal Government. If their friend John Bright had been in his usual health, and able to take his seat, no such futile measure would have been before the House of Commons. It commenced by stating that it assimilated the law of Scotland to that of England, and as Mr. Scot-Skirving had remarked, this had been proposed before by Lord Elcho, and had been treated with scorn. Mr. Hope then proceeded to criticise the various clauses of the bill, and concluded by saying that he cordially agreed with the motion which had been made, that they utterly condemn the bill.

Mr. DUNN (Barney Mains), said that the total abolition of the Game-laws would be a great misfortune. There would not be the slightest protection to the farmers, and he would go dead against anything like their abolition. The chairman had stated that he preferred Mr. Loch's Game Bill, but he thought of all the Game Bills Mr. Loch's was the most ridiculous and absurd which had been heard of and he hoped it had been disposed of permanently (Cries of "No, no"). Noticing the Lord Advocate's bill, he said that in cases where damage was claimed he thought they should be confined to the Sheriff Court entirely, and not go to the Court of Session. He would say if the claim was for £500, that they should go before the Sheriff, and before the Sheriff alone; but he would ten times rather take the Lord Advocate's bill as it stood than the present law as it stood (Cries of "No, no"). The present law declared

that hares and every kind of game belonged entirely to the landlords, and that the tenants had no right to them. He thought this portion of the law was too bad, but he also was of opinion that the Lord Advocate's bill went too far. The landlord and tenant should have an equal right to the game. He moved—"That this Club think the Lord Advocate's bill is an improvement on the present law, but a bill giving the owner and the occupier equal right to the game would be better, and also transferring the trial of game offences from the justices to the Sheriff."

The CHAIRMAN asked if any one wished to second the motion, but as no one did so, it was rejected.

Mr. PATON (Standingstone), said that many were expecting to get a good bill from his Lordship, considering his practical knowledge and sound sense—a bill that would satisfy every reasonable man, though as for others, there was not a bill that would satisfy them. He was thoroughly disgusted with the Lord Advocate's bill. He was convinced it would not satisfy either landlord or tenant, and it would give a great deal of work for procurators, gentlemen of the long robe, and agents. He thought that was the most of it. He was convinced that all who said they wanted reform in the Game-laws did not desire it, but wished to carry on the game cry as an agitation. Many M.P.'s would be sorry to see it settled, he had no doubt; and many persons would like it for a hustings cry. But what had the Liberal Government offered them? He was convinced that had the bill been brought in by the Tories it would have been much more liberal. It was a pity that there should be any bad feeling between the landlord and the tenant, and he thought the first thing to allay that feeling was to give the tenant a large interest in the game. For himself, nothing would give him greater pleasure than to be allowed to have a little interest in the game, and to take care of it and keep off poachers.

Mr. STEVENS (Gallane) thought that the Lord Advocate had a sympathy with the farmers, but that the exigencies of the Government had compelled him to bring in a bill which the farmers could not accept. He considered the bill the sham of a bill, and said that the club should memorialize Government to go into the whole questions of the Game Laws, the Law of Lease, and the Law of Hypothec.

The chairman's motion was then agreed to.

Mr. HORN (Fentonbarns) said that from a Parliamentary return it appeared that 1,340 individuals had been convicted

of poaching under the game laws of England alone, and that all this had happened for the sake and the support of a few individuals, for it appeared that there were only 2150,000 collected for licences. He thought the club should express their opinion in favour of the principle of Mr. Macpherson's bill—that hares and rabbits should be taken out of the game laws; and he moved accordingly.

Mr. SHEPHERD seconded the motion, remarking that such a measure would be the very thing to diminish poaching.

The CHAIRMAN stated that the last deliverance of the club had been in favour of Mr. Loch's bill, and he moved the previous question.

Mr. WYLIE (Polton) seconded the motion.

A vote was then taken, when the previous question was carried by a majority of 10 to 9.

The meeting then adjourned.

PETITION TO THE HOUSE OF COMMONS ON THE GAME-LAWS.

The following is the text of a petition of the Haddington Farmers' Club to the House of Commons:—

"Unto the Honourable the Commons of the United Kingdom of Great Britain and Ireland in Parliament assembled, the petition of the Haddingtonshire Agricultural Club,

Humblly Sheweth—

"That a bill has been introduced into your honourable House by the Lord Advocate of Scotland, and Mr. Secretary Bruce, entitled 'A bill to amend and assimilate in certain respects the law of England and Scotland relating to game.'

"That your petitioners observe with regret that these objects are sought to be obtained by vesting in the occupants of land in Scotland the whole primary right of killing and taking game upon the lands they occupy, and by providing, *inter alia*, that in case of disputes between landlords and tenants all claims for damages on account of game exceeding £50 shall be carried to the Court of Session.

"That the competition for land in Scotland is such that occupants are not in a position to retain the right to game which the bill proposes to give them, and your petitioners do not see that the assimilations of the laws of Scotland to those of England in this respect could be of any advantage, whilst they look with dismay upon the prospect of litigation which several of the provisions of the bill open up.

"May it therefore please your honourable House not to pass this bill into law, and your petitioners will ever pray."

AYRSHIRE FARMERS' CLUB.

At the third annual general meeting of this club held at Ayr, Mr. Robert Dalgleish, Templeland Main, President, occupied the chair.

The SECRETARY said he had received from Sir David Wedderburn, M.P., a copy of the Lord Advocate's Game-law (Amendment) Bill. In answer to a question the Secretary said he had received a copy of Mr. Loch's Bill and others, but all these he thought would be laid aside till the Government measure was disposed of. He read the rubrics of the several clauses of the Government bill to indicate its provisions.

Mr. YOUNG, Kilhenzie, said he wished to make a few remarks in regard to this bill. He did so with considerable regret, as he was sorry to think the Lord Advocate had seen fit to bring in such a bill, and he would be surprised if it did not receive the united hostility of the farmers and people of Scotland. It appeared to him that the Lord Advocate Young was the only person in Scotland who did not know the amendments required on the Game-laws. His bill leaves it in the power of landlords to bind tenants to preserve all kinds of game as heretofore. In short it is worse than existing Game-laws, bad as these are. Under this bill a landlord will be enabled to put clauses in a lease and fine farmers £50, £100, or £500 for killing a rabbit, a hare, or a pheasant. In short game may be multiplied *ad infinitum*. That was sufficient to convince them that the bill should receive their warmest hostility. It appeared to him, and had long done so, to be a most iniquitous and unjustifiable law which prevents a man

from taking such measures to protect his property as he might think necessary. The present Game-laws amount to something like this: you may see your crops destroyed before your eyes from day to day, and yet you dare not lift your hand to protect them. Nothing short of this will satisfy not only farmers, but the people of Scotland: they must, under all circumstances, and at all times, have the right to defend their crops which are their property from ground game. If the bill of the Lord Advocate were passed, it would not stop the agitation for a single day. If Mr. Young had led the Government to believe that the bill would be a settlement of the question, they must be undeceived. He hoped that farmers everywhere, as he had no doubt would be the case with the farmers in the north of Scotland, would give him such a warning as he could not help acknowledging. He ventured to say there was not half-a-dozen members representing Scotch constituencies would find their seats safe if they supported such a bill as that. Next to the Irish Church question, there was none which excited more public feeling and interest at last election than the Game-laws. He was glad to say that the farmers of Ayrshire were so far advanced in opinion on the question that they did not consider it a question between landlord and tenant, but one affecting the whole community. One of the worst effects of the laws was their injurious and demoralising influence upon large sections of the working classes, inducing them to become poachers and then criminals. They were thus the means of filling our jails and poorhouses. He concluded by proposing that they petition the House of

ommous against the Lord Advocate's Bill, and that the petition was sent to Sir David Wedderburn for presentation. Mr. H. C. GRAY said it would not be difficult to show that in the town had as deep an interest in the question as the farmers in the country. He took it for granted that this would be admitted. He was astonished that the Lord Advocate should have introduced such a measure. Mr. Young used to want the tact, courtesy, and forethought of his learned predecessor, the Lord Justice Clerk; otherwise he has known that this measure, instead of being conciliatory, would evoke more hostility than the measures suggested by Mr. Loch and others. He greatly mistook the feelings of farmers if they did not wish the Legislature to give power to protect their crops. What they complained of was that their crops were eaten before their eyes; yet when they sought damages, they got no redress whatever. He thought the game fed by the crop of the tenant belonged to the tenant, and his landlord ought to remunerate him if he lost to have the privilege of shooting over his lands. He did not say whether Mr. McLagan's or Mr. Loch's bill was better of the two; but either of them is preferable to this Lord Advocate's. He quite concurred with Mr. Young's views, as from all he had heard, the bill would create a state of hostility; and that county members would not be their seats if they gave it their countenance.

MR. YOUNG seconded Mr. Young's motion.

MR. LILWORTH wished, when the subject was before the Chamber, to mention a case illustrative of the operation of the game laws, and which showed the utter inability of the law giving landlords the power to reserve game, to redress grievances. A farmer not very far from Ayr, on a lease of a farm along with his father. When the father died the farm there was very little game on it, and much of damage being done. There was a clause in the lease giving the game, which the present tenant's father

did not object to. During the currency of the lease, however, the game began to increase, and did increase to such an extent that it became a very great nuisance. The farmer suffered a heavy loss annually, and at last, unable longer to submit to the injury, he applied to the factor, who gave him no redress. Things went on without the grievance being attended to by the representative of the laird, till again the tenant went to him. The factor received him rather sharply, stamped and fumed, and asked him why he came there pestering him about game; that he had taken the farm with his eyes open, and must just abide the consequences. Determined not to suffer injury without adopting such remedies as he thought were within his reach, the tenant asked the factor to name a practical man, and he would name another to value the damage done, in order to allow of remuneration for loss being given. No attention was paid to this offer. The tenant got two persons of skill who went over the fields, and they assessed the damage at £40. He sent in an account for that amount. Then the factor sent one man who calculated the damage at £10. Nothing, however, was done; the arbitration did no good. Determined to protect his own property, the tenant then set traps and snares to kill the rabbits. Of course the game-keeper caught him, and word was sent to the factor next day. Letters passed between them, and the result was he was interdicted from killing. However, while they were greasing the wheels of the law-engine in Edinburgh to make it turn out an interdict, the tenant was busy killing the rabbits, and the result was that, though the case cost him £10, he made more than that out of the vermin, besides gaining considerable relief from the reduction of their overwhelming numbers.

The motion was unanimously agreed to.

Mr. YOUNG afterwards moved that the Club petition in favour of Mr. Loch's game bill, which was seconded by Mr. MURDOCH, and unanimously agreed to.

SCOTTISH CHAMBER OF AGRICULTURE.

THE GAME-LAWS.

At the general meeting of the Chamber held to consider the Game Bills now before Parliament, Mr. Paterson, a Vice-President, in the Chair, there was a large attendance.

MR. STARR, Mr. Curror, S.S.C., having stated that he had been specially called to consider the Bills now before Parliament, read the report on the subject from Mr. Wilson, President of the Chamber.

"Eddington Mains, 26th April, 1870.

Sir,—I regret that it is not in my power to be present at the meeting of the Chamber to-morrow, as I am still recovering from the house although convalescent.

I like to allow myself to think or say that this Lord Advocate's has been drawn with the view of settling the complaints of the farmers of Scotland with regard to the game laws. I do say that it seems to me to make it evident that the law has failed to appreciate the reality and grievance which give rise to these complaints. At present we are with respect to game, I would say, as things remain as they are than see this.

It will do nothing towards reducing the number of rabbits (the real cause of all the mischief), and it is to the farmer who shall seek redress in the way which it implies add law pleas and open feud with his game grievance. I trust that the Chamber will be petitioning for its total rejection; and I fall back on the ground which it first took up, that the hares and rabbits removed from the game as we held to that, our position was strong and as soon as we resume it the better.

The Chamber will also take action with regard to the change in the dog tax—viz., the wealthy farmer from a most legitimate tax at the expense of

"I have never yet been able to concur with those who seek for a total repeal of the Game-laws, but I know of nothing so likely to drive men into that course as the thrusting upon the country of such measures as the Lord Advocate's Game Bill, and this tax upon crow herds.—Yours most truly,

"JNO. WILSON."

The SECRETARY next read the following letter from Mr. Nicoll, Littleton, who had moved a resolution at the last special meeting of the Chamber on the subject:

"Littleton, Kirriemuir, 25th April, 1870.

"My Dear Sir,—I regret that an engagement previously entered into will prevent me from being present at the meeting on the 27th, when the Game Bills now before Parliament are to be discussed. The Lord Advocate appears to me as simply a burlesquer, and I regret that it should have been on any motion that the Chamber of Agriculture requested him to prepare a bill on the subject. I should, on the other hand, be sorry to think that there was occasion for such a sweeping measure as Mr. Taylor's. It would in many instances undermine, if not altogether destroy, the relationship presently subsisting between landlord and tenant.

"The Whigs at last election dangled the hare-and-rabbit question before our eyes, and under promise of a fair, reasonable, and equitable settlement brought about the almost total extinction of the Tory party in Scotland. We have been lamentably and treacherously deceived; but the day of reckoning will come, and this sham measure of theirs, were an election now to take place, would, I believe, be the foundation, so far as the agricultural constituencies are concerned, of a decided Conservative reaction.

"Failing help from the Tories, might we not hope that the Scotch landlords—our natural allies after all—would step forward and aid us in this emergency, in this deadlock, and proclaim that their eyes are now open to the fact that the preservation of ground game is incompatible with modern agriculture, and that for the future they would place it at the com-

mand of the tenantry? Had I been able to be present at your meeting, I should have availed myself of the opportunity of pleading, as a member of the Chamber of Agriculture, with the landlords of Scotland to do so.

"Failing that, so strongly am I convinced of the utter antagonism between high and liberal farming and the preservation of ground game, that I shall, however unwillingly, ally myself with the party which clamours for total abolition of all laws relating to game.—I am, believe me, yours sincerely,

"THOS. NICOLL.

"D. Curror, Esq., S.S.C."

The SECRETARY next read resolutions on the subject which had been passed by members of the Chamber residing in the county of Aberdeen, and the following communication from Ayrshire:

"Shields, Monkton, Ayrshire, 20th April, 1870.

"DEAR SIR,—The Counties' Committee of the Scottish Chamber of Agriculture for Ayrshire beg to request that the Chamber do petition the Commons' House of Parliament against the Lord Advocate's Game Bill, they being of opinion that it will prove a most unsatisfactory measure towards settling that sore grievance as it affects tenant-farmers.

"I am, dear sir, yours truly,

"R. M. CUNTINGHAME,

"D. Curror, Esq."

"Co. Representative.

Mr. A. E. MACKNIGHT (advocate) said he did not think there was any likelihood of their succeeding at the present time in successfully pressing the question of the total abolition of the game-laws. He did not think the state of public opinion was ripe for that; and there was no practical chance of their succeeding in the meantime, if they made the attempt. He asked them as practical men to view this question in a practical way, and he suggested that they should be content in the meantime if there was legislative effect given to a plan by which hares and rabbits might be altogether removed from the game list, and the tenants allowed to do with them what they choose. If the Chamber were adopting this course, they would do a wise thing, and a thing there would be some chance of carrying. If they could get a proper act passed, they could render it utterly incompetent, on the part of owners of land, to enter into contracts regarding hares and rabbits, and to make such agreements utterly null and void. He would go farther, and make it criminal, and in the case of any landlord who should attempt to make such a contract, he should be liable to a penalty. If they could carry that they would have a combination of both the game bills of last year. If a majority of this Chamber took that view of the question he thought it would have a great influence in the country. This bill of Mr. Young was an indication of how public opinion was running in high quarters. He could not support or approve of the bill in the least. He would propose the following resolutions on the subject, which he thought would effectually meet the grievance:

"1. That the over-preservation of game is absolutely inconsistent with modern high farming.

"2. That were hares and rabbits struck out of the game list, and Parliament to enact that all contracts preserving these animals are illegal, great benefit would arise to the agriculture of the nation.

"3. That the law of England gives no practical benefit to English farming, and would give as little to Scotland; and hence the bill of the Lord Advocate assimilating the Game-laws of England and Scotland does not ameliorate the existing grievances under which admittedly Scotch agriculture labours, but, on the contrary, would lead to litigation and disputes, and embitter the relations between landlord and tenant, and would result in a state of matters worse than the present, and therefore that the Chamber should petition against the bill of the Lord Advocate.

"4. That the other game bills, in so far as inconsistent with these resolutions, be also petitioned against." He thought the bill should be rejected entirely. It was a bill proposed apparently in the interests of the tenant, but in reality it was a landlord's bill. It did not remove the evils; at least it proposed to remove them in such a cumbrous and tedious and expensive mode that the remedy would be almost as bad as the disease. If they were satisfied that Government had failed in their attempt to remedy the grievance they ought

to point out to the Government what measure this Chamber considered would be a real and honest measure. He expressed his opinion that Mr. McLagan's Bill would not remedy the grievance; but he thought that if these resolutions were embodied they would be an effective mode of dealing with this grievance. He did not think that in the meantime they should insist upon any measure for the total abolition of the Game-laws.

Mr. RIDDELL (Houndlee) moved: "That this Chamber is of opinion that the Game-laws are most injurious to agriculture. That they tend to demoralise alike landlords, farmers, and labourers, being productive of crime, thereby adding to the heavy rates under which all classes suffer, and that every legitimate means should be taken to obtain a repeal of these laws." I do not intend to take up the valuable time of the meeting by entering into a discussion on any of the game bills at present before Parliament; neither do I mean to enter into a history of the Game-laws. I only crave the indulgence of the meeting for a very short time to say a few words in support of the resolution I humbly propose for your acceptance. The Game-laws are injurious to agriculture in many ways, on account of the food for the people being destroyed and consumed by game. In proof of this, I beg to refer to evidence taken before a committee of the House of Commons in the year 1846. A witness stated the injury to a field of 40 acres of wheat to be £150. Other witnesses assessed the damages at from £3 to £6 per acre. The damages on a farm of 200 acres at £105. On a farm of 1,100 acres, the wheat crop alone was damaged to the amount of £173. On another farm of 900 acres, rent £610, the game valuers gave the damages at £416 8s. These cases are all in England, and everyone knows that the injury to crops are not by any means diminished since 1846. I will only give one case in Scotland. On an estate in Fifeshire in 1844, the damages amounted to nearly £1,000. Number of acres about 1,060. I need not tell you how they act as a bar to the proper cultivation of arable land. Go where we will we find most enlightened and crack farmers saying that if they had known that game and rabbits would have been preserved to such an extent, they would not have taken their farms, or at least would not have improved them to same extent. The game laws are one of the main obstacles in preventing the breaking up, and otherwise improving of waste land. Of late years sheep and cattle, and even great numbers of human beings, have been forced, evicted, and depopulated to make room for deer, a quadruped of small national value. Game may justly be said to be a monopoly for the landed proprietor and the wealthy at the expense of the poor. Would an enlightened and equitable landlord require a tenant to subscribe to such conditions as the following? "Reserving to the proprietor all fish, game, including hares and rabbits, and game of every description; the tenant renouncing all claim of damages occasioned by hares and rabbits, or game of any sort. The tenant shall not break up any sheep pasture or meadow without the permission of the landlord in writing. By the infraction of this clause the tenant will incur a penalty of £10 per acre. No lurchers or greyhounds to be kept without the permission of the proprietor. There shall not be on any farm a greater number of dwelling-houses than are absolutely necessary for the accommodation of workers constantly employed on the farm; and the tenant shall not have power to let any house or cottage upon the lands to any person obnoxious to the proprietor; and the tenant binds himself to remove from of the farm any person who may be so reported at the first term after intimation is given them to that effect." There are leases entered into this present year, 1870, by tenants in Roxburghshire not materially different from these just referred to. As to the labourer, many an honest and industrious man has become a deep-dyed criminal in consequence of having been tempted to take a hare or rabbit on going to or returning from his employment, caught in the act, convicted on the evidence of a gamekeeper, sent to gaol from inability or unwillingness to pay the fine—there meeting with company anything but safe or conducive to improvement in either health or morals. Follow him a little further, and it will be found that the man released from prison cannot find employment, is forced deeper and deeper into the abyss of crime; and should he have a family, by and by they are thrown on the parish, making the already heavy rates more burdensome still. The temptation is so great to a working man to make a good day's wage in a

short time, the wonder is that greater numbers are not tempted and turned from honest labour to that of poaching. I make bold to say that the game laws do not prevent poaching, that they tend to make poaching almost a necessity. I notice that Sydney Smith quotes evidence given by a London salesman before a committee in 1823. He says: "I could supply the whole city of London any fixed day once a week all the year through, so that every person might have game for his table. I would be bound to procure ten thousand pheasants a week, and I would send to Scotland to say that every week the largest quantity that could be procured to be sent. Being but a petty salesman, I sell a very small quantity, but I have had about 400 head thrice direct from one man." By making game the property of the man who owns land when found there, and by allowing anybody to buy and sell what is now called game when lawfully come by—in other words, abolish the game-laws—there is no fear of the amusements of the rich being interfered with; but I feel satisfied that the temptations of the poor would be greatly diminished. "Do the country gentlemen imagine that it is in the power of human laws to deprive the 3 per cent. of pheasants; that there is upon earth, air, or sea, a single flavour (cost what it may) that mercantile opulence will not procure? Increase the difficulty, and you enlist vanity on the side of luxury, and make that to be sought for as a display of wealth which was before asked only for the gratification of the appetite. The law may multiply penalties by reams; squires may fret and justices commit, and gamekeepers and poachers continue their nocturnal wars—there must be game on Lord Mayor's table. You may multiply the crimes by which it is procured, but nothing can arrest its inevitable progress from the wood of the squire to the soil of the citizen" (S. Smith's Works). When we look to England we find there a growing desire to have the game-laws abolished. And let us turn to the north of Scotland; we find there also great progress making towards the views I have now expressed. I now humbly submit that nothing short of the absolute repeal of the game-laws will meet all the evils that the community suffer from. I now beg that every friend of humanity and every man who has the well-being of the great mass of the population of these lands at heart, unite and do what he can to have these laws removed from the Statute-Book. In conclusion, he might say in regard to the resolutions proposed by the previous speaker, and in reference to Mr. Loch's Bill, his opinion was that they would not answer the purpose they expected. The necessity of the case was not so great as in his opinion, to demand the interference of Parliament or the Legislature of this country between the tenant-farmer and his landlord in the matter of contract. If the Game-laws were just and equitable let them be continued, but if unjust and inequitable, depend upon it they could not be one moment too soon abolished. He had strong hopes that the repeal of these obnoxious laws was not far distant. He did not agree with Mr. Macknight that there was no hope for their repeal.

Mr. MACKNIGHT: I said in the meantime.

Mr. RIDDELL did not agree even with that, for he thought the day was not far distant, and he considered that the Lord Advocate's Bill and Mr. Loch's Bill would go far to convince men that there was no cure short of the total and unconditional repeal of the Game-laws.

Mr. BETHUNE (Blebo) agreed in the main with Mr. Macknight's motion. It was idle to waste words on the Lord Advocate's bill, as it looked very like killing a dead dog. The Bill was too clever by half, and would utterly fail to meet the wants of Scotland. He thought the game nuisance of Scotland was confined to a comparatively small number of estates. He was of opinion that Mr. McLagan's Bill, if it was ever to meet the real evils of Scotland, would require to be altered in the way pointed out by Mr. Macknight. The right to kill game, he held, was the inalienable right of the owners of the soil. He had great faith in the sound sense of the practical agriculturists of Scotland, and if the Chamber could induce them to come half way towards the settlement of the question he thought an amicable settlement would be arrived at. The great evils were the existence of over-preserved estates, which evils they could reach by Mr. McLagan's bill. So far from wishing to see the Game-laws done away with, he should like to see certain birds, which he believed to be the true friends of agriculture, more protected. From the over-preserving of game they had to a great extent destroyed the balance of nature. He

was of opinion that they should give up to the proprietors the right to the winged game, and entirely abolish their right to these pests of the farm—viz., hares and rabbits. He was certain that the opinion of this Chamber would be listened to some time or other on this subject, but he warned them against taking any action rashly. As to Mr. Loch's bill it might be that it was an honest bill, but, if so, it appeared to him that it was an honest bill introduced for the purpose of doing a dishonest thing. As to the bill of the Lord Advocate, he looked upon it as too clever by half; yet it was well enough seen through, and it betrayed a total want of knowledge of practical agriculture. The effect of its provisions would be to leave the tenant-farmer in as bad a position as he had ever been in, with reference to that subject. He believed it would yet be said of the Lord Advocate that he had made a grand mistake in his political career, in having introduced a bill on the game question before he brought in a bill for the abolition of the law of hypothec, for that was the thing that would have settled the whole game question. He concluded by seconding Mr. Macknight's motion.

Mr. SCOT SKIRVING said he believed the Chamber would be unanimous in condemning the bill of the Lord Advocate. Its leading provision put Scotland on an equality with England as a starting point, and already they had seen, from the example of the great country, how utterly inefficient the working of the law there had been. The people of Scotland would be worse with that provision, because it would become an imperative duty on every writer in Edinburgh to see that the tenant-farmer had a thoroughly stringent clause in his lease about the game; whereas at present, though some of the leases had bad clauses, some of them were lenient, and others had no clause at all. Since addressing the meeting recently at Haddington, he had thought over one of the clauses of the Lord Advocate's bill, which said that the tenant was not to be prosecuted as a poacher if, in spite of the clause in his lease, he killed hares, but that he might be prosecuted under his agreement. Now one part of that agreement was that whoever did not adhere to the terms of that lease, should be subject to pay a large sum of money—generally £500. Now, for his own part, he could see no reason why a man who had promised in his lease not to do a certain thing and did it, in violation of that condition, should not be held liable in a penalty of £500, under the Lord Advocate's Bill. In regard to the motion of Mr. Macknight, it seemed to him to be a union of the principles of Mr. McLagan's and Mr. Loch's bill; it was by such a combination that he seemed to be intending to attain his object. His learned friend was a bachelor, and as people changed after marriage, perhaps he thought if he made a union between Mr. Loch's bill and Mr. McLagan's bill they would agree better. Any little aversion might after marriage be done away with; but really there was too much aversion between these two bills to pull quietly through. He adverted to the paper by Mr. Riddell, and said it appeared to show that landlords were to be allowed to make such dreadful conditions in leases, that they would not allow dogs to be kept up, a gun to be kept, or too many hewes to be kept; and it struck him (Mr. Skirving) he was going to advocate Mr. Loch's bill, but he was astonished that in Mr. Riddell's concluding remarks it was said that the panacea for this dreadful thing was to do away with the game-laws, which would leave the landlord to make any bargain he liked. He would propose the resolutions of the Aberdeen Chamber, which were as follows: "That any attempt to redress the grievances suffered by game based on compensation for damages to crops cannot be satisfactory either to the public or to farmers, (1) because compensation for the direct damage (even if it could be satisfactorily ascertained) would not indemnify the farmer for the indirect loss arising from injury to his system of cultivation; (2) because claims for compensation would form a constant source of dispute, irritation, and discontent between landlord and tenant; and (3) because crops being still liable to damage by game, this insecurity would continue to deter farmers from investing in the soil the capital they otherwise would in the endeavour to increase the production of food. Second, that the Game Bill introduced by the Lord Advocate, proposing redress by increasing the facilities for obtaining compensation, is therefore unsatisfactory. Third, that any measure promising a settlement of the game question must at least confer on the tenant the inalienable right, either by himself and others having his authority, to

kill hares and rabbits on the land occupied by him." These resolutions embodied everything in the motion of Mr. Macknight, with the exception of the question of dropping hares from the list, which called in third parties to redress evils that they were quite able to redress themselves. Mr. Macknight, he believed was in error as to rabbits being in the game list. This was not the case, so far as the occupant was concerned; but they were in the list so far as the public were concerned. Unless there was a special clause to the contrary, rabbits were given to the tenant.

Mr. RIDDELL: By the Act of 1862 rabbits were put in. Mr. MACKNIGHT said that by the Act rabbits were smuggled in. By the law of Scotland rabbits were held as vermin, and but for the Act of 1862 they would have continued to be so regarded.

Mr. SKIRVING said that Mr. Macknight's resolutions combined Mr. Loch's and Mr. McLagan's bills, and he could not see how one man could support both, and he therefore begged to submit the Aberdeen resolutions to the Chamber.

Mr. DUN (Dunning, Perthshire) seconded the motion.

Mr. HOPE said he objected to that part of the resolutions proposed by Mr. Macknight which made contracts regarding hares and rabbits illegal. He was inclined to go almost the length with Mr. Riddell, but he did not think there was any likelihood at present of such a measure as that gentleman referred to being carried; and therefore he thought that they should return to the original motion, which was that hares and rabbits should be taken from the game list. He was not inclined to go any further at present, for he was afraid that they might have a very stringent trespass law, which would make matters worse than at present. He had no doubt that the time would come when it would no longer be seen that for the sport of a few individuals they should have ten thousand convictions, as they in England last year, for the infraction of these laws. He moved that no settlement of this question shall be considered satisfactory unless hares and rabbits were withdrawn from the game list.

Mr. DURIE proposed—"That no bill attempting a settlement of the question can be satisfactory unless it declares all game on let land be the mutual property of landlord and tenant, with mutual rights therein. That the jurisdiction in poaching cases should be removed from the justices to the Sheriffs, and that all questions arising out of the game damage be only competent before the Sheriff Court; and that the decision of the Court be final." The total abolition of the Game-laws, he held, was most undesirable, and it would prove particularly unfortunate to farmers living in the neighbourhood of large towns. Farmers in such circumstances would be inundated with poachers. At present he was very much annoyed by poachers, and was at considerable trouble in keeping them off. Mr. Macknight seemed to take Mr. Loch's Bill altogether. He objected to any proposal which would prevent bargains between landlord and tenant.

Mr. ELDER (Bereford) supported this motion.

Mr. BETHUNE suggested that Mr. Macknight should put into his motion a proposal that deer-forests should be fenced and taxed. They might depend upon it that that question would come up eventually.

Mr. MACKNIGHT said, if it were the general feeling of the

Chamber that that question should be taken up in his motion, he would be quite willing to include it.

Mr. RIDDELL (Howford) thought the motion of Mr. Macknight was a very reasonable one, and, if carried out, he believed it would satisfactorily settle the matter. Mr. Riddell's motion to do away with the game-laws was simply nonsense. For his part, he did not see anything wrong about the game-laws. The question should be one of arrangement between the landlords and the tenant-farmers. There were two classes the farmer wished to get rid of—the game-preserver and the poacher. The poacher did no good either to himself or any one else, but broke the laws of the country, and should be put down; while the game-preserver, on the other hand, was guilty of acts of meanness that even a poacher would despise. If the question were left as between the landlord and tenant, it would have the effect of doing away with both, because, without the game-preserver, the poacher could not exist. He thought Mr. Macknight's proposal was a sound one—that it should be rendered illegal to make any contract that would have the effect of preserving hares and rabbits. Mr. Scot Skirving was following in the right direction; but he hoped he would not press his motion so as to lead to a division in the camp. It was highly desirable that the Chamber should be unanimous.

Mr. MACKNIGHT, in reply, explained that if a bill was passed in the terms of Mr. McLagan's bill to-morrow, if there was nothing further said it would be utterly useless. It would not give them any relief, because all the landlords would take care to preserve the game; they would be just where they were. Mr. McLagan's bill would be an utter sham; but if a bill were passed in terms of his resolution it would be a vastly different thing, as it would give effectual relief. He thought that they were substantially as one in this Chamber upon both sides as to the grievance, and that some fair and honest measure should be taken to remedy that grievance. In some other remarks he pointed out that the Aberdeenshire resolutions and those he was proposing were virtually the same, and he showed that, even though Mr. Durie and his second were to support his resolution, they would still make a present of the game to the landlord.

Mr. SCOTT SKIRVING pointed out that the difference between Mr. Macknight's motion and the one he proposed was that Mr. Macknight unfortunately adopted the dropping of the hares. For his part, he meant to follow the county of Aberdeen rather than another Edinburgh lawyer. They had had enough of that in the Lord Advocate's bill (Hear, hear, and applause.)

Mr. SHEPHERD, Gleghornie (who now occupied the chair), in the course of a few remarks, expressed his opinion that the Chamber should just now be very much united in the object they had in view. He counselled that there should be no division, as then their opinion would carry ten thousand times more weight.

The vote was afterwards taken. There voted for Mr. Durie's amendment only 2 members; for Mr. Skirving's motion, 10; and for Mr. Macknight's motion, 12. Mr. Macknight's motion was therefore declared carried.

In a short conversation which followed it was endeavoured to get the meeting to be unanimous for Mr. Macknight's motion, but no practical result followed.

THE GAME LAWS AND GUN TAX.

A meeting of the Aberdeenshire members of the Scottish Chamber of Agriculture was held within the Corn Exchange, Aberdeen, to consider the Lord Advocate's Game Bill and the proposed Gun-tax. Mr. Copland (Ardlethen) acted as Chairman.

Mr. J. W. BARCLAY stated that he had received a letter from Mr. McCombie, M.P., expressing regret at his inability to attend the meeting in consequence of arrangements preparatory to his leaving for London to resume his Parliamentary duties, and declaring his approval of the resolutions, which he (Mr. Barclay) had drawn up in regard to the Lord Advocate's Game-law Bill. He took this opportunity of expressing, on the part of the agriculturists of Aberdeenshire, and of Scotland generally, their sense of obligation to Mr. McCombie for

the course which he had taken in the game question. He had no doubt but the views expressed by Mr. McCombie to the members of the House of Commons and several members of the Government went far to make the Government frame the Bill of the Lord Advocate in the way they did. It was of great importance that they should have a man with practical knowledge representing them in Parliament when such an important measure as this came up. The Lord Advocate's Bill was, he said, in theory an excellent measure, but when viewed practically it would come far short of removing the great grievances of which the farmers complain. The first provision in it began very satisfactorily by making hares and rabbits the property of the occupier of the soil; but then when the clause goes on to say

"unless the landlord reserves such right to himself," it nullifies the clause entirely, so far as the farmers were concerned. There was not an estate in Aberdeenshire, he believed, on which the game was not strictly reserved for the proprietor, and when the landlords had this still in their power would they not continue to do it? Though the game would thus be in theory the tenant's, they would in practice belong to the landlord. The conditions were entirely in the landlord's power. A tenant, it might be said, should demand his rights when he was taking his farm; but if a tenant made any such reference in regard to game when he was taking his farm, the chances were that he would forfeit all his prospects of it. One of the best features in the bill was the ostensible proposal to abolish the game laws so far as the farmers were concerned; but then, if the game were reserved by the proprietor, the tenant could not touch them without the landlord having recourse to prevent him by action of damages. Mr. Barclay then went on to condemn the compensation clauses of the bill as altogether unsatisfactory. No measure based on compensation for damages would be attended with a successful solution of the question. They all knew very well that a farmer need not go to his landlord in regard to any arbitrary question between them, unless he is prepared to dispute with his proprietor; and how many of them could afford to do that? The bill in practice proposed to hand the rabbits to the proprietor as well as the hares, and that was making matters worse. So long as these grievances existed farmers would not invest their capital fully in the soil, not knowing whether they were to reap the returns, or whether they were to go to feed the landlord's game. If the Game-laws were abolished a stringent Trespass Act would be necessary to secure the tenant against damages to crops through the trespassing of poachers. Of the two questions he should prefer the food of the people to the extermination of the game; but the latter was not necessary to bring about redress to the farmers.

Mr. CAMPBELL (Blairton) said the bill of the Lord Advocate did not touch at the root of the evil at all. The Government, he said, must surely have been regardless of the agitation going on for some time on this subject throughout the country when they introduced such a sham measure as they had done. Every grower of crops should have full liberty to protect the same. The remarks of Mr. Gladstone on the subject last

year led them to expect that some such measure as that proposed by Mr. Loch would be brought forward by the Government. If that had been done it would have been more satisfactory, as Mr. Loch's bill was the best measure that had yet been before them of the kind. The Lord Advocate's bill would practically be of no use to the farmers. The Government would find that the Scottish tenant-farmers were rather an acute class to be caught in such a slim trap. What was it but the effects of the Game-laws that was driving so many of the labouring classes in misery into the towns? In the interests of the community, as much as those of the farmers, he condemned the Lord Advocate's bill in even stronger language than Mr. Barclay did.

The CHAIRMAN agreed with what had been said by both speakers, except that he thought Mr. Barclay might withdraw his resolution calling for the entire abolition of the Game-laws, as it had nothing to do with the Lord Advocate's bill, to consider which the meeting was called. He condemned the clause compelling the farmer to raise only one action for damages in the year, and within three months of the date on which the acts were committed, while the landlord might raise 365 actions against the tenant. That showed how much the measure was one-sided.

Mr. BARCLAY, desiring complete unanimity, withdrew his last resolution, and the others were adopted unanimously, and ordered to be forwarded to the Secretary of the Scottish Chamber of Agriculture for submission at their next meeting.

Mr. BARCLAY then called attention to the Gun-tax proposed by the Chancellor of the Exchequer in lieu of game licences. That was like taxing tools of trade so far as the farmer was concerned, for he could not shoot a crow without a licence for himself and another for a servant, if he employed such to preserve his potatoes, wheat, and other crop from vermin. He thought a farmer should be permitted to use a gun on his own farm for shooting vermin to save his crops without being taxed; but if he went beyond his own boundaries he should be liable to pay the same as others. He thought they should call the attention of the county members to it, and also make a representation to the Chamber of Agriculture against the tax on farmers within their own farms.

This was seconded, and agreed to unanimously; and the meeting adjourned.

KELSO FARMERS' CLUB.

At the last monthly meeting, Mr. Usher, Stodrig, in the chair, the subject for discussion was "The Game Bills before Parliament."

Mr. PURVES (Lintonburnfoot) said it was a very difficult question, there being so many intricate points about it. There were no fewer than three or four different bills on the subject, which all differed from one another, and it was difficult to tell which was best. In some of these bills there was, in his opinion, a great deal of nonsense, as, for instance, in the Lord Advocate's bill, which proposed to assimilate the law of Scotland to that of England, so that the whole of the game would belong to the tenant, the landlord being allowed to bring it back. He did not agree with that provision. He thought no tenant in Scotland could complain of the landlords having some sport, and it was very aggravating to the landlord for the tenant to get the whole of the game. He thought the best way would be for hares, partridges, and pheasants to be divided equally between the landlord and tenant. Rabbits were not game, and they were by far the greatest nuisance that the farmer had to contend against. If the tenants got one-half of the game, it was as much as they were entitled to. There might be a difference as to the sharing of it, but he thought that might be settled by a regular account being kept of the game killed, and each receiving an equal share. He wished particularly to secure possession of the rabbits, because they multiplied so quickly and were so destructive. With regard to the other kinds of game, partridges were a harmless sort of bird, and did little ill on a farm; pheasants, when they got to excess, eat up a great quantity of corn, and destroyed a great deal with their feet; and hares, when they were unwar-

rantly numerous, became exceedingly destructive, and were not much better than rabbits. With regard to rabbits, they were not in the game list, but landlords took good care to insert a clause in the lease reserving to themselves the privilege of destroying them. He could give a number of instances where the tenants were not allowed to kill the rabbits, which were killed by the landlord and sold for his benefit. Now he thought that was a great hardship—that a tenant, after feeding all the rabbits, should be restricted by his lease from killing one of them. He held it was most rigid; and how were the tenants to pay their rents except by keeping stock? And it was a fact that on some farms rabbits were so destructive that a very small stock could be kept. He knew an instance where a great many sheep had died owing to the excess of rabbits. The Cheviot hills were swarming with them, and tenants dare not touch them because they are restricted in their leases. He knew another case equally as bad as the one he had mentioned, where the tenant was overrun with them, and many of his sheep died. He employed a man to destroy them, and the man killed upwards of 5,000 on a 600-acre farm in about a year and a-half. The tenant, thinking they were exterminated, gave over killing them, but in about a quarter of a year they again became so numerous that he had to employ another man, but the landlord then said that if he did not refrain from killing them he would take legal measures against him. He (Mr. Purves) thought that was the worst case he had ever heard of. He hoped the question would soon be settled, so that there might be peace. It was a very disagreeable thing when the landlord and tenant were at variance, and they could surely be united in the bonds of mutual trust and friendship. Rabbits were so prolific that a pair in less than a twelvemonth

bred at least forty young ones. Partridges and pheasants only bred once a year, and hares thrice.

Mr. SCOTT (Spylaw) said his idea of the question was that the game-laws should be abolished altogether, and he did not think that there would ever be a satisfactory understanding between landlord and tenant until that was done.

Mr. BORTHWICK (Cowbog) thought the tenants should have an equal right with the landlord to the game.

Mr. BURN (Ednam) thought the game was the landlord's and not the tenant's; and the question just came to be whether a person in taking a farm would like to have the game on his farm or not. If he wished the game, then he would just pay the more for his farm.

Mr. DOUGLAS (Riddlestonhill) approved of the proposition of the Aberdeen branch of the Chamber of Agriculture, that the tenants should have an inalienable right to the hares and rabbits, either solely by themselves or along with the landlord, but in such a way that the landlords could not deprive them of

that right; but he would by no means make hares and rabbits the property of the public.

Mr. JACK (Leith) thought the tenant should have the ground game, and the landlord the winged game.

The CHAIRMAN said he could not say very much for the Lord Advocate's bill, as the assimilation of the Scotch law to that of England did not seem to alter the case much, because at the present time tenants had a right to kill hares and rabbits on their farms by obtaining the consent of their landlords. If the game was handed over to the tenants just now, when they came to make a new lease the landlords would bargain so as to reserve the game to themselves, and they would be in much the same position as at present. The Lord Advocate's bill would make it a simpler matter for the tenants to get compensation for damages caused by game, and it was an advantage to be able to bring a case before the Sheriff. It would be an excellent settlement of the question for the landlords to reserve the winged game, and allow tenants the ground game.

ROTATION OF CROPS AND THE APPLICATION OF CAPITAL TO AGRICULTURE.

At a meeting, of the Banbury Chamber of Agriculture, the Rev. C. W. Holbeach in the chair, Mr. COTHER said: I proceed, in the first place, to give you my own experience and information on the subject of a light, sandy soil; secondly, to consider the better mode relative to the cultivation of retentive stone-brash; and thirdly, to make a few remarks on the kind of soil which prevails generally in this district. In the first place, I propose that the first-named soil, being sandy, shall be farmed on a five-course system; the second, or retentive stone-brash, on a three-course system; and the third on a five-course system, the details of which I propose to enumerate thus. The sandy soil to be cultivated on the following rotation: first, fallow; second, barley; third, peas; fourth, rye, seeds, mangolds and swedes, with a liberal dressing of manure previously supplied; fifth, barley. This is a course by which the land may be kept from tendril couch, by the occasional application of the fork, which can be best applied during the crop of mangolds and swedes, both before and after they are raised or consumed. The second or stone-brash soil to be formed on a three-course system; viz., first, wheat; second, barley or oats; third, every kind of green crop known, or to be known, as a preparation for wheat. What I mean by the green crops already known as a preparation for wheat are these: rye, beans, peas, trifolium, Italian ryegrass, or a mixture of Italian and trefoil, and the various kinds of clover, or any others that may be introduced. The third kind of soil already named, or that which generally abounds in this district, I propose should be farmed on a five-course system; viz., first, turnips; second, oats; third, barley; fourth, beans and seeds in equal proportions; and fifth, wheat. The reason for naming the oat crop after turnips is this. On the highest-farmed land in Norfolk, this is preferred, because the succeeding barley crop is not thrown or lodged; the barley is of superior quality, the seeds are not injured by lodging of the barley, and the seed crop is superior either for mowing or grazing. I shall now proceed to consider the summary of these courses on a farm of 350 acres. First, there will be 150 acres of corn, 60 acres of rye, and 50 acres of mangolds, and swedes on the sandy soil. Secondly, there will be 168 acres of corn and 83 acres of green crop; but by the addition of an indefinite number of acres of beans, the 168 acres may be increased. The third course will comprise 175 acres of corn and 75 acres of swedes and beans. This will give an idea; from the various courses I have named—at what rent the different soils should be taken; but the further consideration of this question may be better left for a future paper in detail, by some person more competent than myself to decide on such a question. There are still two other kinds of soil to be alluded to; but they do not abound in this immediate neighbourhood, and are of a directly opposite character to each other, viz.—a very thin brash soil, such as is found on the Cotswold hills; the other being a very heavy clay. The first of these, as I gather from the best authorities I have met with, should be farmed upon a six-course system, viz.: 1st, turnips; 2nd, barley; 3rd, seeds; 4th, seeds again; 5th, wheat; and 6th

oats. And here I should observe that preceding the oat crop there should be a liberal application of cart manure, and that the turnip crop succeeding should be thoroughly well manured with super-phosphate of lime. This is a system, as will be observed, by which each crop of corn will be kept at a considerable distance from the others of a like description. With regard to the clay, having lived in a clay district, the old system would perhaps be best adhered to, thorough draining having done much to improve such soils; and here from the most experienced farmers I gather that the better rotation as a preparation for wheat is vetches or clover consumed by sheep early in the summer, a fallow made, wheat succeeding the same year, to be followed in the next by beans, and in the following year by barley. I would here, as a rider, if I may be permitted the term, say that I recommend mangolds and swedes mixed, because I believe and feel almost certain that mangolds have the nature of taking that from the soil which is prejudicial to the successful growth of swedes, and inducing a healthy state, the swede crop being almost free from the dreadful disease known as "finger and toe." I would here remark that in using the drill for planting mangolds and swedes, the seed should be in proportion of 36 ounces of mangolds to 16 ounces of swedes, the seed to be thoroughly mixed in the box of the drill, in the proportion of 9 oz. of mangolds to 4 oz. of swedes, and that the hoe should be applied immediately on the appearance of the plants, as sandy land produces so many annual weeds. There now arises a very grave question, and one which requires very carefully handling. It is what is the most satisfactory arrangement that can be come to between landlord and tenant? My own opinion is that there is a very simple basis on which that conclusion may be come to, viz., to graft on the present agreements the customs of Lincolnshire, admitted to be not only the most improved, but one of the best cultivated counties in the kingdom, quite equal to Norfolk, where leases are prevalent. In the former county the tenants are protected by equitable tenants' compensation. This tenants' compensation in Lincolnshire is twenty-five per cent. upon the last two years' outlay for oilcake, to be paid by the in-coming to the out-going tenant, wholly irrespective of the landlord. This compensation from the in-coming to the out-going tenant is based upon the production of just bills; but in the event of erroneous or unjustly made-up accounts being introduced, the out-going tenant forfeits his claim to compensation under this head. In reference to other drawbacks, I am not sufficiently informed to place before this chamber any information, but I believe that it may be found that there are others, and to a considerable extent. With these observations, it is better for me to conclude that the improvement of agriculture may be unlimited under wise and careful provisions; and here allow me to say that this is no less an agricultural than a consumer's question, the well-being of every individual consumer of agricultural produce being concerned therein, and therefore the improvement and perfection of agricultural science and practice is a subject which concerns the interest of all. There still remains one of the

most tender subjects to be touched on that can possibly exist between landlord and tenant, viz., the question of game—a subject that I would not have interfered with had it not been that so many tenant-farmers are greatly injured by its over-preservation, which I am happy to say does not prevail in this neighbourhood to any great extent. At the same time I would wish to remark that the practice of letting manions with the right of game-preservation has frequently proved not only inimical to the interests of the tenantry on the estate, but has also led to the severance of the ties between landlord and tenant. This might be avoided by the adoption of such reasonable arrangements and concessions as are granted by such noblemen as Earl Ducie and the Earl of Jersey, and now to be added Lord Leigh, who have set an example well worthy of imitation, and one which has not only proved most satisfactory to the tenantry, but also protective of pheasants and partridges. I have now to thank this chamber for its patient consideration of the question which I have feebly brought before it, hoping that it may induce a liberal and not heart-burning discussion on the various topics to which I have but cursorily alluded. I hope, at the same time, that I have not in treating upon this or any other subject made a single enemy, and that none such is anywhere to be found. In consideration of these Lincolnshire customs, I would suggest that a committee be formed to take this subject into consideration, such committee to consist of the chairman, the vice-chairman, and secretary, three landed proprietors, and three tenant-farmers, as you will then have a preponderance of the landlord element in the committee; that they shall well consider the question and report to a future meeting of the chamber.

Mr. SCRIVEN said that there was one thing in which he had to differ with Mr. Cother, and it was this. He found that on his farm he could not grow wheat well after fallow, and he thought it was much better to have oats or beans.

Mr. COTHER: Your land is not old enough.

The CHAIRMAN: (to Mr. Scriven): How long is it since the land at Wormleighton was broken up?

Mr. SCRIVEN: About twenty-five years.

Mr. WESTOVER said his experience of stiff land was that a great deal depended on the seasons, over which, of course, they had no control. If the season was good, he sometimes found a very good crop after fallow, especially of vetches. If they had a succession of wet and frost, it injured the wheat; but he had had good barley from stiff land.

Mr. SCRIVEN: On strong land I have tried to grow barley, but it was only fit for pigs. It would never make malt, and the malsters would not buy it.

Mr. WESTOVER: Don't you find it affected by the seasons. On a retentive soil I have grown much better-priced barley than I have grown on other land.

Mr. SCRIVEN: It might be an exceptional year, like the last.

Mr. DUN said that in the management of thin, poor clay soil, which at present was the least paying portion of the area of this island, a great deal depended upon how it was treated. Its fertility could be raised very rapidly by a liberal growth of vetches. On the clays that lay down near Shipston and its neighbourhood, and also in a large portion of Staffordshire, vetches were cultivated, and they fertilised the soil, and kept it thoroughly clear for the growth of wheats of all kinds. From some little experience in the management of clay farms, he found that by growing vetches upon them for the feed of sheep—and allowing them cake and corn besides—it raised the fertility of the soil more rapidly and economically than by any other means that could be adopted (Hear, hear). In the cultivation of poor clay land it was the want of fertilising materials rather than the superabundance of them that they had to complain of.

Mr. GARRETT did not agree with Mr. Cother as to the stone-brash soil. He thought that a five-course system would be better than a three under such circumstances, and would conduce more to the fertility of the soil.

Mr. COTHER said that he had referred to this stone-brash, and he did not think that Mr. Garrett's soil was such.

Mr. S. BERRIDGE said that Mr. Cother had given them a very good idea of the rotation of cropping, but they could not get crops if their land was not in condition. He would have much preferred it, if Mr. Cother had gone a little further into the subject of the application of capital to agriculture. Certainly he should like to have heard from him what treatment

he thought would be best in the management of the different soils he had a knowledge of. It was certain that the application of artificial manures had a great deal to do with the treatment of the soil and the rotation of cropping—(Hear, hear)—and he thought it preposterous to think that they would have good crops if their land was not fit for them. A man might act on a certain system which might be very well and good on certain land; but they knew that there was land in that neighbourhood that required the application of lime, and it would be a great benefit to them if Mr. Cother would inform them as to the application of lime and the different kinds of artificial manures to be used, so that they might grow better crops by their application and secure the rotation of cropping most to be desired. He would be pleased if Mr. Cother would inform them what treatment the land had received from him to the benefit of himself and agriculture generally, and of his use of corn, cake, and artificial manures.

Mr. COTHER: I know nothing about science.

Mr. DUN said that the concluding portion of Mr. Cother's paper ought to have been diseased first, for, from the agreements between landlords and tenants, very often sprang the system of management of farms, and the rotation to be adopted. The details, such as the rotation of crops, had hitherto been left rather too much in the hands of landlords and agents and too little to the discretion of the intelligent tenant. He thought hitherto in a large portion of this country, that agriculture had languished owing to miserable interference on the part of landlords, and who, although singularly incompetent to give advice, had yet attempted to impart it to their tenants, who were very often bound down by the most absurd arrangements. Very often landlords introduced into their leases and covenants clauses which, if faithfully carried out, led to an uneconomical system of management. In many leases there were clauses which prevented the tenant from cropping up the land around his fences, which therefore afforded great harbourage not only for game, but also for weeds of all descriptions. Very often there were clauses which prevented the tenant from cultivating two successive good crops, and in Lincolnshire and elsewhere, although it would have been profitable enough to grow a barley crop after a wheat crop, tenants had had to grow roots. Then again, owing to prejudice, in many parts of the country there was an absurd embargo against the growth of potatoes, which might be made very profitable, and which he had known to realise from £30 to £40 per acre. Illustrations of that kind might be multiplied, and, if it was not for those restrictions, they would have a greater amount of capital applied to the cultivation of the soil. He believed that the reason tenants had not laid out very much capital hitherto was through these restrictions, and also that they had not that security which leases gave them. He was perhaps trenching on ground that was not quite prepared to be discussed; but matters of this kind must commend themselves to the common sense of practical agriculturists. If a farmer in ordinary circumstances invested a few thousand pounds on a farm of 250 acres, he did so entirely upon the faith of his landlord. This was so in most localities, and, if the tenant was without a lease, or some other form of agreement, he must entirely depend upon the landlord's good faith and fair dealing. Life they all knew was extremely uncertain, and a landlord's successor might not have the same feeling towards a tenant, and might not carry out arrangements in the precise manner that his predecessor had promised verbally to do. They would have a much better system of farming; they would have a greater amount of enterprise, industry, and energy; and they would have more capital applied to the cultivation of the soil, if a system of leases or tenant agreement, such as Mr. Cother had referred to, was more general amongst them. The land would be found much better cultivated if they had a tenant agreement, such as was the practice in Lincolnshire and Norfolk. It would encourage the tenants to lay out all their available capital, which they would never do under the existing arrangement of from year to year. The best farming, as a general rule, he did not say invariably, was to be found in localities where leases had been used for a number of years. He was quite aware that in some instances the landlords objected to give up their right to the soil for a considerable number of years, but it would only make landlords a little more careful in the selection of their tenants, and they would select only men

of approved education, skill, and intelligence. Looking at it from the landlord's point of view it would do a great deal of good, and not only raise the status of agriculturists, but bring a large amount of capital to the soil, and also eventually very materially improve the value of the soil, because at the end of the lease the land would be in a much better state of cultivation, and of more value, than at the commencement of such lease. If landlords selected the right men they would not require to bind them down in the matter of cultivation, except perhaps during the last year or two, when they might grow two green crops, or two white crops, or even three white crops, as was done in some parts of England. In a lease for eighteen or twenty years it would be necessary to introduce one or two clauses with reference to the system of cultivation during the last two or three years, to make sure that there would be a certain proportion of the land in condition to raise a crop, and that it be in such a condition that the in-coming tenant might enter upon it and be able to carry it on profitably. He quite agreed with what Mr. Cother said about the in-coming tenant paying so much for manure and artificial foods, but the difficulty in doing so was that it might increase very materially the cost of entry to the tenant, who generally required every available shilling that he had in his possession; but by paying for unexhausted improvements, the in-coming tenant got the benefit of them in the ordinary cultivation of his soil.

The CHAIRMAN observed, as had been said, the subject of landlord and tenant was a little tender, and had there been other landlords present perhaps they would have said more than he would on the matter. He was not bred a landlord, and only became one late in life, and it had never been other than his wish to be what a landlord ought to be to his tenants. These questions with regard to landlord and tenant were new, and therefore some allowance must be made to landlords who who had been brought up under the old system, which in many respects he hoped was not a bad system. That old system was looked back to with respect, as it had been the system of their father and grandfathers, but whatever the system was he was sure that they meant to do and wished to do a good part by their tenants. He hoped that never for a moment would anything exist between landlord and tenants there except the most cordial feelings, and rather than it should not be so he would leave the room and never enter it again. He hoped there would never be anything like estrangement between landlords and tenants, and if there was a right feeling on both sides, it appeared to him that all their differences might be fairly and amicably settled. There were one or two things mentioned by Mr. Dun that he would like to say a word or two about. Mr. Dun said that leases would make landlords more careful in the choice of tenants. But in many cases there was an old attachment existing between landlord and a family on his estate, and in the case of a tenant dying he might have sons that would be eligible to succeed him, and he must say that he never wished to break off the connection with an old family. Probably in such cases if he were to go farther, he might get a well-educated man, a more intelligent man, and a man who desired to go forward in the management of the farm, but still he preferred not to sever his connection with an old family. In the changes of tenants that had occurred with him, in the majority of cases he had carried on with the old families; although he might have gone further and found a tenant who would have done better for himself and better for him (the speaker) in the end. He thought the landlords should have a remedy against the neglect of tenants. If a landlord gave a lease for twenty-one years, as suggested by Mr. Dun, the man might be active and energetic enough the first half of the lease, and the other half he might let the land go down so as to be quite worthless, and he thought the landlord should be protected against such neglect.

Mr. DUN: Clearly, there must be a remedy on both sides.

Mr. WALTON said there must surely be some cause operating in this district that prevented the application of capital to agriculture, when the farmers of Scotland and Lincolnshire could give from £3 to £5 per acre for land, while they in the Midland Counties could only give from £3 to £3. If they compared the system of tenure adopted in Scotland with that of this locality, the comparison was greatly in favour of the former. In Lincolnshire they had the system of compensation for unexhausted improvements, and if a tenant increased

the value of his holding during his occupation he was compensated for it. He quite agreed with the Chairman that there should be protection for the landlords, for he knew that land had been robbed by out-going tenants; he maintained that the man who robbed the land robbed the landlord, as it was capital taken out of the land. The present system of rating discouraged the application of capital to agriculture, and if a landlord erected commodious farm buildings—which were certainly much wanted in the Midland Counties of England—the land was raised in value in consequence, the rateable value of the land was increased, and both the tenant and the landlord had more to pay (applause).

The CHAIRMAN asked if the land cultivated by landlords who were at perfect liberty in the matter of cultivation produced any better crops than that cultivated by tenant farmers?

Mr. COTHER: You have the advantage of the argument.

The CHAIRMAN: A landlord can lay out as much capital as he likes, but does he turn out better crops than his neighbours?

Mr. DUN: But does he lay out the capital? Does he not follow out the system that he finds practised at his own door.

The CHAIRMAN: Then he follows a bad example.

Mr. DUN: He follows in the groove of the locality. Probably it is his farm bailiff who manages his farm for him, and he follows out the system pursued in the locality.

Mr. C. SIMMONS (the Secretary) thought that as a rule they did not see much difference on farms occupied by owners and on those occupied by tenant farmers, unless on farms occupied by small enterprising owners. Of course a gentleman occupying his own farm could afford to spend more money on cake, corn, and artificial manures than a tenant would be expected to do. He considered that a great deal of difficulty arose from the want of some protection to the tenant, and in his opinion a Landlord and Tenant-right Bill would be much better than a system of leases—(Hear, hear). A bill protecting the interests of landlord and tenant would do more to encourage the application of capital to agriculture than leases would, and they could not shut their eyes to the fact that there were bad tenants as well as bad landlords, and the only way to guard against difficulties that might occur on both sides was by a Tenant-Right Bill. He did not think that leases would do, as tenants evaded some of the clauses of them, and he cited the case of a man who occupied a large farm in Wiltshire on lease and during the last two years of his occupation he did not keep a horse, sheep, or pig on the place, and left no manure or straw. A claim of £650 was made for breach of covenant. It was submitted to arbitration, and £350 were awarded; and the straw that was sold off the farm made more money than the whole amount received as compensation. When a man set to work to beggar a farm he could so reduce it that it would not be worth 6s. an acre to anybody. When a landlord once had a tenant of that description they could not be surprised if he was cautious as to the terms on which he let his land. He thought the best system was that pursued at Farnborough, where there had never been a lease granted. There were only yearly agreements there, and as long as a man did what was right he had no cause to fear.

Mr. HILL: That's the best way, where it can be carried out.

Mr. DUN: Doubtful.

Mr. SIMMONS: I certainly think a tenant ought to be paid for improvements in the soil. It is better for a man to pay £300 more when he goes into a farm in good condition, for many a man going into a poor farm has been ruined before he could turn round (Hear, hear). In reference to the rotation of crops, he must say that he was somewhat of a latitudinarian. They could not get good crops if the land was not in good condition, and he never sowed a crop on land unless he felt sure that it would bear a good one. There were times when the land wanted rest, and no man would ever get anything by taking three white crops in succession.

Mr. WESTOVER was in favour of a Tenant-right Bill, but he would be sorry to see the pressure put on here that had been put on on the other side of the Channel to secure it.

Mr. WALTON said that in Scotland, where there were leases, there was a greater amount of capital invested in land than there was in this part of England, and the difficulties that had been pointed out by the Secretary with regard to leases would be obviated if it was provided in the lease at the end of it

that the tenant should be compensated by the capital he left in the land. An enterprising tenant under a good landlord would endeavour to do his best and try and get another lease of the farm (Hear, hear). As to proprietors farming their own land, he believed they were the worst farmers in the country (laughter), and they did not see the man who farmed his own land invest more capital in it than the tenant-farmer did. If they wanted to see the best farming they must look for it amongst the tenant-farmers.

Mr. DUN : Quite right.

Mr. WALTON : I saw, in the report of the proceedings of one of the Chambers, it stated that the reason why tenant farmers did not invest more money in the land was because they had not got it. I consider that no argument at all. There are plenty of farmers who are investing capital in other ways, and why should they do so?

Mr. COTHER here urged the appointment of the committee mentioned in his paper, and

Mr. DUN said that the committee would need to sit a week and take evidence. They would need to examine landlords, agents, and tenant-farmers.

Mr. COTHER : Not at all. They would only make inquiries.

Mr. WALTON : What weight will your conclusions have if you don't do as Mr. Dun has said?

Mr. WESTOVER proposed that Mr. Cother's paper be printed and circulated amongst the members, and then they would be in a better position to appoint a committee after they had read it for themselves and given it their careful attention. The question altogether was rather a delicate one, and after they had considered it it might be brought up again and a com-

mittee appointed to endeavour to bring about a better state of matters between landlord and tenant.

The CHAIRMAN said that he did not think there was time for any legislative action just now, and for the present a good deal must be left to the good feeling of landlords and tenants, and such a discussion as they had had that day would help to promote that feeling. He had been informed that Mr. Cother's paper would appear in the *Banbury Guardian*, and perhaps that would meet Mr. Westover's suggestion.

Mr. WALTON suggested that they should pass a resolution to the effect that, in order to encourage the application of capital to agriculture there should be an agreement between landlords and tenants for a number of years, with compensation for unexhausted improvements.

The SECRETARY : That would be a lease.

Mr. S. BERRIDGE : We have leases now.

Mr. DUN : You have no leases.

Mr. SIMMONS : They are going out.

Mr. DUN : They are coming in, and are being adopted all over the North of England.

Mr. WALTON : When a man has a lease he has got some security for money that he may lay out.

Mr. DUN : If a man goes into a farm for twenty years does it not stand to reason that he will bring all the money he can to improve it?

The following resolution was ultimately agreed to—"That in order to encourage the application of capital to agriculture, tenants be allowed greater security and permanency of tenure, with compensation for unexhausted improvements."

A vote of thanks was given to Mr. Cother for his paper, and a similar compliment was awarded to the Chairman.

THE LABOURER AND HIS HOME.

At the last meeting of the Newbury Farmers' Club the Rev. C. W. EVERETT, Vicar of Woolhampton, read the following paper :

We have read a good deal about the agricultural labourer, and both he and his employer have received many hard knocks from those who assume to be well versed in the subject on which they undertake to treat. We have at different times, at our own meetings in this room, considered the question of education, and the moral and industrial training of the labourer, as well as the responsibility of his master to see to his well-being and comfort. Nor has the cottage accommodation been forgotten, and the necessity of providing good and sufficient dwellings for those on whose conduct and efficiency your own success, in the path of life you have chosen, so much depends. But I do not think the subject has been exhausted. At all events, I am sure that you will agree with me that it is one of absorbing interest, and of immense importance; and if I can add but little that is new, the short time now at my command will not, I hope, be wasted, if I stir up again some half-formed, but, it may be, dormant resolution to exert yourselves actively in a cause so well deserving the attention of the philanthropist and the Christian. I have joined together "the labourer and his home" because it is, I believe, through home influences that he can be made to assume that position in society which will render him happy in himself, exemplary in his social duties, a real help and useful servant to his employer, and a valuable member of the community. But how often is his cottage not his home! How little does it, in too many instances, deserve that sacred name, which awakens in the minds of those who have tasted of its sweets so many and such pleasing recollections! The labourer's cottage is too often only his nominal abode, but scarcely his home. After spending his evening at the public-house, he comes there to sleep off the effects of his intemperance; and with the early dawn returns only half-rested to his daily work. He knows but little of his children, and from the slight experience they have of a father's fostering care, they derive but small advantage. Sometime, alas! the mother's example is no better; her presence at home is unfrequent, and the hungry children cry themselves to sleep, as the only comfort which their untidy, crowded resting-place affords. This, I am thankful to say, is not always the case; nor so much the case as it

was some years ago; but it ought never to be the case. It is, however, no over-stained picture of what was once very common, and is now not in some places unusual. The labourers' dwellings within my recollection are vastly improved. I remember some in the early years of my ministry that were really not fit for human beings to dwell in. One bedroom was a maximum provision for a family to sleep in, where persons of all ages, and of either sex, were huddled together, sometimes the bedsteads having not only beds on them, but under them too. Nor had those who occupied these dormitories always the ties of blood relationship to lessen the evils (if indeed this can be said) of such close contiguity. Sometimes a place was found for a lodger, and a flimsy curtain across a portion of the room was rather an excess of decency and refinement. That typhus fever should have been very commonly prevalent at the time, and in the places I speak of, you will not be surprised to hear; nor that the morals of the labouring classes were at a very low ebb. Whatever may be said of the improvement still required in labourers' cottages, there can be no doubt but that within the last thirty years a great deal has been done, and a great deal is still doing. The great object now is to improve the feelings and habits of the labourers, that they may appreciate and thankfully avail themselves of what has been done for their good. I need scarcely tell you that all care is thrown away, and a decent home provided in vain when the only use made of increased accommodation is to let out what are considered as extra and spare rooms, to strangers, and where the family are satisfied with their old crowded style of occupying one sleeping room. Indeed, the intrusion of lodgers into the family circle increases the evils of over-crowding; and in the common sitting room, around the common supper table, intimacies are formed, and an opening to temptation exists, which often lead to disastrous consequences. The farmers have been held answerable for a great deal of the drunkenness and sensuality that prevails amongst the poor, because they do not, it is said, sufficiently provide for the decent lodging of the young lads they employ, and do not keep them enough under control during those evening hours when their services are not required. Now I believe that masters may do much to improve the moral training of their servants. But to say that they are the sole cause of their turning out ill

is, as a rule, neither true nor fair. I believe that some give themselves a great deal of trouble, often in vain, to reclaim those who come under their charge. There are others, no doubt, who are too careless in this particular. But it must be acknowledged that very many of those who come fresh from their homes, have been breathing a morally vitiated atmosphere from early childhood. If religion were excluded from our village schools, you would in too many cases find no high sense of duty, no thought of responsibility to God, to which you could appeal with any prospect of being understood, much less of making an impression; and what is very sad to reflect upon is this, that the lesson taught to the child at school, is too often practically untaught at home. With the not very promising material brought together under your roof, it is not to be wondered at that even with the best intentions, you often fail of doing the good you would wish; that you become disheartened, then callous, and at length suffer the torrent of evil to rush on its way unheeded that you fancy you cannot stem; and yet, if the lower stratum of society is to be regenerated, it is with these young persons that you must begin. By them is a higher tone of morals to be initiated, and in time, I hope, perfected. Towards effecting this, mere secular education will do but little, whilst a good Christian example will do much. But example will not do everything, and, indeed, will effect nothing if it is immediately counteracted by the evil influence of companions, who are perhaps hardened in vice; and, therefore, I cannot insist too strongly upon what I have heard advocated in this room—the necessity and the advantage of a farmer always requiring a character when he hires a servant. If this were insisted upon, a young man would know that he must behave himself with propriety, or else be thrown out of employ. I think too, that much influence for good might be exercised over these earlier lads by making them feel that they form a part of a well-conducted family; that they are not external to their master's household, but for the time blended with it; that if they are lodged in the house, they are in fact as much a part of the family as the domestic servants are; and that from them the same amount of decorum is required. I may mention, I hope without offence, that where the habit of family prayers prevails, it would be very desirable that these lads should join before retiring to rest. In those cases where they are not taken into the house, a decent and comfortable lodging should be considered a necessary adjunct to the requisite farm buildings; it should be required by the tenant, and provided by the landlord, and this should be presided over by a thoroughly steady man and his wife, who should be required to enforce rules, an infringement of which will bring punishment, and eventually dismissal. A common reading-room, and a place for healthful recreation in parishes, I have on a former occasion mentioned as most desirable, to establish and to keep a sound mind in a sound body. I think that one great mistake in the management of the poor, which law and custom have established, is the treating in them those faults as crimes, which in their superiors in education are looked upon as mere pardonable breaches of good manners. Thus the son of a labourer is sent to prison for that breach of discipline which would bring upon the young man at the University some trifling imposition, or perhaps only a reprimand from the tribunal to which he is amenable. I have taken the two extreme ends of the social scale, to show you that the same remedy which is found effectual in the one case, might, I believe, be applied with equal success in the other. I would introduce into our country villages, something of the proctorial authority—a court that should take notice of moral delinquencies, and treat them as such. It seems hard to send a young man of the labouring class to prison for an offence which, if committed by his betters, would be termed a lark; and harder still, that a mark should be affixed to his name, which will stick to him through life, and which may be brought against him to invalidate his testimony, even should he, on some future occasion (perhaps a reformed and respectable character), appear simply as a witness in a court of justice. A prison is, and should be, a place of punishment, but it is not often, I fear, a place that leads to reformation. When a young man is sent there for a trifling offence he is quite as likely to come out hardened and careless about his future character, as he is to come out a better man. I believe that by a somewhat different course there would be more probability of reclaiming him. The tribunal that I would propose, before which I would in

the first instance bring breaches of morality and good manners—cases which are an annoyance to the peaceable, and disgraceful to the perpetrators of them, but which have nothing strictly criminal in them—might, I think, be composed of the clergyman and churchwardens of the parish. They should have power to admonish, and to fine to a limited amount proportionate to the nature of the offence, and if this fails of effect, or the fine is not paid, the case must then go, as at present, to the bench of magistrates. But I believe that in a majority of cases, the course that I have ventured to recommend would be effectual. I am aware that the composition of my tribunal may by many, in these days, be objected to. I answer, let such recommend a better. I may add that I would have no costs (beyond the fine inflicted), no fees, no counsel employed in these village courts; the attendance of the offender should be voluntary. If he prefers going to the Petty Sessions, let him go. An evil arising from the present mode of punishing trivial offences, is, I think, this: the expenses of going into a magistrates' court are considerable. These are very generally and kindly taken into the account in awarding the penalty, and a lighter fine than would otherwise be imposed; and it not unfrequently happens that a young man goes to prison for the costs of his prosecution, and not for his offence. This irritates his mind, and prejudices him against the law. I believe that by attending to the religious and moral training of the young, by accustoming them to decency and comfort, by making them feel the advantages of a home, you will raise in them a desire for something better than the dwellings with which their forefathers were satisfied, and which I believe have tended more than anything else to produce the low morality which we have had so much reason to deplore. Nor need the wish for an improved dwelling be an illusory one. Both landlords and tenants appear to be awakening up to the importance of the subject, and certainly in all the parishes with which I am acquainted (or nearly all) I see a marked advance in the right direction. There are some miserable hovels built by squatters on wastes, and by the road side, in which the residents claim an ownership, and others built solely as an investment, that it may be difficult to know how to deal with. But the cottages that are attached to the estates of landed proprietors are very much better than they formerly were, and from the general feeling that now prevails, will, I have no doubt, go on improving. But when I speak of the desire of a young man to settle respectably, we must not forget that according to the original law of nature that "it is not good for man to be alone," he will have to seek out an help meet for himself, and that on the training, the discretion, the good sense, and the piety of the partner he may choose will mainly depend whether his cottage becomes his home, or whether he is driven from family comforts to seek for society and excitement at the public-house. If the overcrowding of former days has been detrimental to the character of our male population, how much more has it been so to that of the female. With a greater share of naturally implanted delicacy of feeling, when that delicacy becomes by circumstances blunted, and at length subdued, its recovery is more hopeless, and its loss more detrimental to the interests of society. For after all, the first impressions in good or evil are generally imbibed from the mother. Now let us consider what is the training of our country girls, and what are the expectations for good that we may form from it? They, generally speaking, get more school education than the boys do, unless it is in the case of the eldest girl remaining at home in a large family, who is often wanted to mind the younger children whilst the mother is at work in the field. They are not, as a rule, required to go to work so early as their brothers are. I cannot here enter at any length into the assumed demoralizing effects of field work as compared with other employments for women. I can only say that, with care, this need not be so. I fear that in most cases, whatever may be the after-employment, the seed of mischief is sown at home, and that the crowded dwellings are answerable for much of the evil which occurs afterwards. For this reason it certainly seems desirable that young girls should be got out to household service so soon as they are of a sufficient age to make themselves useful. But here again it must be remembered that they often enter a respectable family with the mind already tainted to an extent, which those who have been brought up apart from the evil influences to which they have been exposed,

cannot easily image. A pretty long residence in country places—a knowledge of the blots which our parish registers reveal, does not enable me to give that pre-eminence in virtue to household servants, over those who seem to be less advantageously situated, that I would wish to do, and in some respect this may be accounted for with a feeling of pity rather than of censure. They are, no doubt, more commonly the prey of the heartless and the profligate. If we consider the advantages enjoyed by female servants in the present day, we cannot but regret that so little real benefit is derived from them. Look at the wages they receive. These are from 50 to 100 per cent., and in some cases even more, above what the same places were worth some 30 years ago. They might lay by from half to three-fourths of their earnings, and yet be able to dress themselves with the quiet neatness which so became the servants who lived with our fathers till they seemed to become a portion of the family: and who loved Master Tommy, Master Richard, and sweet Miss Mary as dearly as if they really were their own kin, and continued to address them as children even after they had perhaps themselves become parents. But what use is made of the larger wages which our female servants now receive? The close imitation of their betters in the frivolities of a luxurious age too plainly declares. And then this finery must be seen and admired. This leads to Sundays out; to a craving for amusement, to a restless discontent with and neglect of duties, to impatience of reproof, however mild, and to a fondness for perpetual change. We cannot look to these, I fear, to regenerate the class from which they spring, to be the wives of an improving peasantry, the mothers of a socially better race; and yet the question I would wish to propose is. Cannot we make them so? Are not we, are not the masters and mistresses of England very much to blame for those errors which in our servants we see and deplore? Are we not too easy and careless, and too little thoughtful of our responsibilities? The higher we ascend in the social scale, the greater is, I believe, this carelessness. The under-servants in a large household are left to the management and control of the upper ones, who too seldom, perhaps, think of anything beyond their efficiency in their particular departments. Even where there is a sense of responsibility, and a real desire to do what is right, there is often much mistaken, and an erring kindness. Now, I should like to see opportunities for the healthful and harmless recreation of the labouring classes multiplied. But when we remember that most of their revels, as at present constituted, end at the public-house, if they do not commence there, it becomes a serious question whether masters and mistresses standing for the time in the place of parents, are not bound to exercise the same controlling influence over the young women in their employ, which natural affection points out as their duty towards their own daughters. We know the education and home training that these servant girls have for the most part received, and surely we should try to elevate their feelings, and not throw them back on that pollution from which a little care of ours may perhaps rescue them. I have dwelt, you may some of you think, at undue length, and entered with unnecessary minuteness into this subject, but when I consider the immense influence for good that may and must be exercised by a virtuous woman; the utter deterioration of character to all who associate with her, of either sex, that follows from the example of a depraved one, I feel that the education and training of the women of the labouring class are chief ingredients in establishing virtuous homes. I will only further add on this subject, that I think a great deal of good might be done, and provident habits established if it was insisted upon at hiring, that a certain sum out of the wages agreed to be given, should be put every year into the savings' bank. If this was not at first very readily acquiesced in, I believe that as the bank book showed the small increasing fortune, the advantage would be acknowledged, and the rule become generally acceptable. I had intended to have entered with some minuteness into the construction and arrangement of labourers' cottages, but time will scarcely admit of this; and, perhaps it is more a question to be laid before landlords, than those who are, for the most part, tenants. I will only say that where a tenant is willing to pay a fair interest upon the outlay for improved dwellings, a landlord ought, as a rule, to be willing to build them; at the same time, it is no advantage to any one to over-build in a rural parish, it is more likely to lead to poverty, and to increased burthen upon the poor's-rate, than to any beneficial result. It is better, in my opinion, either

to enlarge existing cottages, or entirely to remove them, and build others in what may be a more convenient situation, utilizing, as far as possible, the materials that are obtained from the houses that are pulled down. Wherever there is a large family there should be three bedrooms; but as less accommodation may be sufficient for those who are recently married, and for the aged and single people, and may better suit their income, I would have some cottages with two, and a few with only one bedroom, taking care to insist on the removal of a family to a larger dwelling who have outgrown the one which might previously have been sufficient. Gardens or allotments are essential to the well-doing of the labourers, and for these I have always found them thankful. I should put the size of these at from ten to forty poles, according to the means of attending to the required work that each individual may possess. I have necessarily touched upon the dark side of the labourer's character in much that I have advanced in this paper; but I have not lived for nearly a lifetime in country villages without being able to say, with thankfulness, that there is a bright side, and one that will repay the trouble of drawing it out and improving it. Where the character has not been deteriorated by that curse of the labourer, the beer-shop, and the whole temper soured and changed by straitened circumstances, too often caused by his own vice and improvidence, the labourer who has been well brought up possesses qualities which are as genuine and as honourable to him as any which distinguish his betters in rank and education. He becomes much attached to a master who treats him well, and is as careful of his property as if it were his own. He is loyal to his Queen, a lover of his country, and a respecter of order. He has very generally a religious bias, and is more likely to become a fanatic than an infidel. I have hardly ever read a letter written by one of this class to his friends at home from some distant colony to which he may have emigrated without finding a distinct recognition of a superintending Providence. With respect to the honesty of the labouring class, when we consider the immense amount of property which is left unprotected, and sometimes very carelessly, at the mercy of our indoor and outdoor servants, it is really doing them but justice to say that they are, as a class, particularly honest. Nor should I omit among their distinguishing characteristics, their charity to those who are worse off than themselves. Most of their faults may be traced to the brutalizing effects of overcrowded dwellings and abounding beer-shops. Until this last evil is removed, I despair of any decided benefit being effected by any other remedial measure. But, whilst denouncing in the strongest terms the low beer-houses, I should be glad to see the day when a jug of wholesome beer was the general accompaniment to the supper-table of every labouring man. This last subject to which I have referred, and perhaps a few others, are the only ones on which legislative interference is required in order to introduce a higher state of morality among the poor. On most other points, individual exertion and individual determination to do what is right, combined in one long, strong pull together, will, I believe, effect what we all so much wish to see, an improved tone of feeling in the labouring classes. We have a higher code of morals to refer to than was ever propounded by the greatest wisdom of a national Parliament or the most paternal government. The one short and simple rule, to do to others as you would they should do to you, will, if carried out in its true and honest sense, secure all that is required to make us a happy, united, and a prosperous nation.

HEREFORDSHIRE AGRICULTURAL SOCIETY.—

The adjourned general meeting of the members of this Society was held at Hereford, to receive the report of the committee and to arrange generally for the annual show to be held in October next. Mr. J. Janey presided. The report of the committee states "That the season is too far advanced to contemplate any alteration in the time for holding the show for the present year; the show to be held on the day before and day of the Hereford October fair; and that, looking to the finances and other matters connected with the Society, the salary of the secretary shall be considered as a full remuneration for his services, and no extra payment be made to him that is not sanctioned by the committee. The city authorities have given a free grant of the Cattle Market for the annual show; for which a vote of thanks was passed to the Mayor and Corporation.

THE CENTRAL FARMERS' CLUB.

ENGLISH TENANT-RIGHT.

The concluding monthly meeting of the Farmers' Club for the present season took place on Monday evening, May 2nd, in Salisbury Square; the chairman for the year, Mr. James Howard, M.P., presiding. The attendance was very good. The subject fixed for consideration was "English Tenant-Right," the introducer being Mr. Henry Corbet.

The CHAIRMAN said: When the Committee selected the subjects for the present year, the month of May was purposely left open, on the supposition that some measure might be introduced by the Government affecting the interests of agriculture, which it might be desirable for the Club to discuss. Up to the last monthly meeting no measure had been proposed which the Committee thought it necessary that the Club should discuss. At this juncture it was somewhat singular that Mr. Clare Sewell Read and himself, without communicating with each other, wrote to the Secretary, urging the desirableness of introducing the subject of English Tenant-right to the notice of the Club, and asking the Secretary himself to introduce it (Hear, hear). Their respected Secretary at first demurred to take this course, urging that it might be thought he had been, of late, sufficiently often before the Club; but when they reminded him that he was the author of the prize essay upon Tenant Right, which to this day remained the standard work, if not the only work upon the subject, and that therefore, he, above all others, was the man to bring the matter forward, he at once consented to prepare a Paper (cheers).

Mr. HENRY CORBET then read the following paper:—

At our last annual dinner in December, I ventured to say that many of the members did not appear to know what the Club had really done in times past. I said so much when referring to the discussion of the previous evening, which had brought the relations of landlord and tenant once more under consideration. Indeed, during the last half year or so the duties of landlords and the rights of tenants have been continually cropping up again all over the country. It is probable that the introduction of the Irish Land Bill has tended to direct more general attention to the question; and, at any rate, this affords me an opportunity, in the outset, of drawing the strongest possible distinction between Irish and ENGLISH TENANT-RIGHT. I profess to speak with no especial authority on the Irish claim, but it seems to me to work very commonly something in this way: In the first place, the outgoing tenant expects to be paid very liberally for every improvement he has made; in the next, to receive a very handsome sum as "goodwill" for giving up possession; and then—he thinks it a very great shame that he should have to leave his farm! ENGLISH TENANT-RIGHT does not go quite so far as this; and if I now attempt to define to you what this English right actually aims at, and in so doing, necessarily travel over some well-worn ground, my reason for doing so must be the misapprehension which still continues to exist on the subject. At that very meeting in December one of our members stated that "this question suffered through being overshadowed by a cloud of vague generalities. They constantly heard such phrases as 'unexhausted improvements'—'custom of the country'—'duties of landlords,' and so on. What did they mean?" It will be my object to endeavour to answer that question, and to show what unexhausted improvements, customs, and duties do mean. In setting about this, I shall have to take you back to the earlier history of the Club, and to something of what it has done, as I have said, in past times.

The first year, then, in which the Club held any regular series of discussion meetings was in 1845, and in the December of that same year the following subject stood in the name of my much valued friend the late Mr. Wm. Shaw, of the Strand: "Tenants' Rights as between Landlord and Tenant." In introducing this, Mr. Shaw said: "I should define Tenant-Right to be the right of the tenant to require compensation legally for outlay in the improvement of the soil or buildings when the period of his occupation has not been of sufficient duration to enable him to reimburse that outlay. I need scarcely remark that

the portion of the outlay which should be reimbursed is that which remains after making due allowance for the benefit he has derived. I consider Tenant-Right as a question purely between landlord and tenant, and wholly distinct from the rights between incoming and outgoing tenants, commonly called 'tenants' rights,' or dues. The payments made by the incoming to the outgoing tenant vary according to custom, and although embracing certain other items, are little more than payments for labour, frequently used as a means of drawing heavily upon the purse of the incomer, absorbing his capital, crippling his means, and preventing him from managing his farm to advantage." This passage embodies not only a very good definition, but a very nice distinction between acts of improvements and acts of husbandry. The meeting, which may be said to have gone altogether with Mr. Shaw, concluded by adopting his opinion, that "A system of Tenant-Right would promote the interests of both landlord and tenant, and must materially conduce to the advancement of practical agriculture." In the succeeding month another or an adjourned discussion on the same subject followed, when a Tenant-Right committee of the Club was appointed. In the January of 1847 Mr. Shaw took up the subject from the landlords' point of view, when the Club went with him in declaring "That a well regulated system of Tenant-Right would be beneficial to the landlords of this country." Upon this Mr. Pusey brought in his Bill, on which he specially asked the opinion of the committee of the Club, which was given accordingly in the following report:—"The committee of the Farmers' Club on Tenant-Right have perused the draft of a Bill for the improvement of agricultural Tenant-Right in England and Wales, forwarded to them by the kindness of Mr. Pusey; and, after suggesting some alterations in the various clauses, do recommend that all items respecting buildings, roads, and fences, be left out of this Bill, and that a clause be added on a supplementary Bill be prepared to afford tenant farmers those privileges in the removal of buildings erected by themselves which manufacturers and tradesmen now enjoy, the landlord having, in the first place, the option of taking all or any by valuation." Then we prepared and presented petitions in favour of the Tenant-Right Bill, and a deputation from the Club waited on Lord John Russell, the Prime Minister of the time, who, in answer, said that inquiry would be the best means of showing the justice of the cause, and of diffusing information on the subject. In the summer of this same year, 1847, a local Farmers' Club offered a prize for the best essay "On the necessity of some legislative enactment to secure the tenant farmer the benefit of his improvements, and the great national advantages that would accrue therefrom." Being by that time tolerably familiar with the question, I was in the face of some competition fortunate enough to write the prize paper. As I said in the preface to this when I published it as a pamphlet: "When it is remembered that the Tenant-Right claim, if not entirely originating with, has been mainly supported by, the proceedings of the London Farmers' Club, the advantage of being associated with the business of that institution is at once apparent. The effect of this connection has been, to induce the writer to give his arguments with more force and decision than he might, perhaps, have ventured to do on his own unsupported liability. As it is, there is not a case assumed, nor an opinion broached, but for which he could name the very highest authority and example." I feel that I am thus relieved of any charge of egotism when referring to this Essay, which has been quoted or read again and again, with and without acknowledgment; while I am happy to add, that in a review of its proceedings, as taken two or three years since, the Wenlock Farmers' Club considers their Prize Essay on Tenant Right to be "standard authority to this day."

In the spring of the following year, 1848, the Premier fulfilled his promise, and a Committee of the House of Commons was appointed to take evidence on,

and inquire into the Agricultural Customs of England and Wales in respect to Tenant Right. And after some very careful study of the evidence thus collected, I have no hesitation in saying, that the Tenant-right Blue Book contains more valuable and more reliable information on the practice of agriculture than any work that ever was published in our time. Of course we had a hand in it. Mr. Philip Pusey, the Chairman of the Committee, came again to the Farmers' Club for witnesses, and we called for him some fifty or so of the picked men of all England—landowners and land agents, tenant-farmers, members of the Club, and others, whose reputations had reached us. It was, however, by no means a one-sided inquiry, at least half of the members of the Commons' Committee were dead again at the principle, and everything that could be urged against it was brought up. Nevertheless, a Blue Book is at best but dry reading, while this was kept back in a somewhat suspicious manner, after having been partly circulated; and at the request of Mr. Pusey, Mr. Shaw and myself undertook to prepare a Digest or proper arrangement of the evidence. I was in those days a very sanguine energetic young man, and I may tell you, what was then no secret, that I had the lion's share of the labour, and hard work it was, too; although, as is generally the case with hard work, when you are in a condition to stand it, this did me a deal of good. Mr. Clement Cadle, I see, in his prize essay on Farming Customs and Covenants, states, handsomely enough, that he is something indebted in the compilation of his Customs to the "Law of the Farm," a work in which not merely the general arrangement but actually some of my introductory remarks are taken, without any such acknowledgment, from the Tenant-right Digest. And it is from this Digest, or like Hercules by the aid of his own Club, that I propose to clear off the cloud of vague generalities, and to interpret those hitherto mystic phrases known as "unexhausted improvement," "custom of country," and "duties of landlords."

There is, then, in certain parts of Lincolnshire more especially, a certain custom which recognises payment for unexhausted improvement; or, in the words of the Report of the House of Commons' Committee, "In some parts of the country a modern usage has sprung up, which confers a right on the outgoing tenant to be reimbursed certain expenses, incurred by him in cultivation, other than those of ordinary husbandry.—That among such expenses are included the purchase of food for stock, the purchase of certain kinds of manure, and the draining, chalking, and marling of the soil; the result of all which outlay is, to effect an improvement of the soil, more or less lasting, and requiring more or less time to elapse before the increased productiveness, thereby obtained, reimburses the expenditure incurred.—That this modern usage appears to have grown out of improved and spirited systems of farming, involving a large outlay of capital, and to have been promoted by forms of agreement between landlord and tenant, whereby the former covenanted to give compensation for such outlay; which forms have been from time to time altered and enlarged, and are still extending themselves with the continued advancement of agriculture.—That these uses have gradually grown into general acceptance in certain districts until they have ultimately become recognised there as the custom of the country.—That, in practice, the compensation agreed to be paid by the landlord to the outgoing tenant, is paid by the incoming one.—That its amount is found by valuers, who ascertain the cost of the several improvements, spread that cost over a certain number of years, within which each kind of improvement respectively is supposed to repay itself, and then deduct from that number the time during which the tenant has enjoyed the benefit of the improvement." This usage is distinguished in the Commons' Report from the more ordinary practice of paying the outgoing tenant for "the preparation of the soil for crops by tillage, for the straw, hay, and dung left on the farm," and so forth. We then come to see which are properly the landlord's duties, and which the tenant's, in this good work of improvement. Briefly then the *permanent*, such as building and draining more particularly, should properly be the duty of the landlord, while the *temporary*, such as the due use of lime, bones, guano, oil cake, and ashes should be the business of the tenant. With regard to buildings, the House of Commons' Committee reported very much as the Farmers' Club Committee had done: "The law, with respect to things affixed to the freehold is different and more beneficial as regards those annexations made for the purposes of trade, than those made

for the purposes of agriculture, an outgoing tenant being permitted, in many cases, to remove the former, when erected by himself, but not the latter.—That this distinction does not appear to be supported by any sound reason, and your Committee are of opinion that the tenant's privilege of removal, with respect to fixtures set up for trading purposes, should be extended to those erected for agricultural objects." This recommendation has been carried into effect, and by an Act passed in July 1851, a tenant has now the power to remove buildings which he has erected with the landlord's consent, if the latter decline to take them at a valuation. In fact his right so far is secured by law, but no further. The Report of the Commons' Committee admits "That the improvements (already mentioned) which are very generally required throughout the country, in order to develop the full powers of the soil, are greatly promoted by this system of compensation, and therefore it is highly important that all difficulties should be removed which stand in the way of its extension by the voluntary act of landlord and tenants." This is encouraging enough. The next clause, however, declares "That any attempt to make its general introduction compulsory would be met by great practical difficulties, and your Committee rely for the general and successful adoption of the system on mutual arrangements between landlords and tenants." Although this was only carried on a division, still the feeling against legislation has been very strong at times and places; and the landlords of Lincolnshire actually petitioned against the custom being enforced by law on the very good but rather selfish showing that in their own case the custom had the force of law already. Then Mr. Caird went further still, and as *The Times'* Commissioner could hardly say anything too bad about Tenant Right, as towards the end of his book he thus sums-up against it: "It must be plain that it is not the interests of the landlords, if the decision is left with them, to adopt this system. To legalize it by Act of Parliament, so as to render its operation general over the kingdom, it would be necessary to prove that it would promote the public welfare. We have seen in the counties where it exists that *the Agriculture is on the whole inferior to that of other districts* (the Italics are his own), and in no cases, even under the most favourable circumstances, superior to other well-conditioned counties which do not possess this TENANT RIGHT. In every county it has led to fraud in a greater or less degree. It perpetuates bad husbandry, by stereotyping costly practices which modern improvements have rendered obsolete. It absorbs the capital of the entering tenant, thus limiting his means for future improvement. It unfairly depresses the letting-value of the land. Perhaps it may be urged that we dwell on the abuses rather than on the fair and legitimate uses of the system. But it is not easy to see where the line of demarcation is to be drawn."

It is easy enough here to see what it is the writer does not wish to see. Instead of attempting to draw any demarcation line, he is, on the contrary, very careful throughout the whole of this passage to confuse the payment for acts of husbandry with that of the payment for acts of improvement. Holding him to the latter—to the Tenant Right we go in for, payment, that is, for unexhausted improvements—I am prepared to contradict on evidence every one of his statements. I say that *it would be* to the interests of the landlords generally to adopt this system. I say that where it already exists the agriculture is on the whole not inferior but *superior* to other districts and to other well-conditioned counties which do not possess this Tenant Right. I say emphatically that its effect is to *perpetuate*—the word of all others—not bad but *good* husbandry, by stereotyping not *obsolete* but *modern* improvements; and I say that it *raises* not depresses the letting-value of the land. I have promised that this contradiction should be made on evidence, and the first witness I will call shall be Mr. Caird himself. It is thus, writing in 1850, and still as a *Times'* Commissioner, that he speaks of Lincolnshire: "Till the reign of George III. the county remained in a neglected state, the fee simple of the now cultivated wolds and heaths worth little more than their present annual rent; the fen districts an unwholesome reedy waste, prolific of ague and aquatic birds. Till even a more recent period the improvement was slow. In the parish of Limber, sixty years ago, four tenants renting 4,000 acres of land at £125 each, or 2s. 6d. an acre, became bankrupts. The same land is now yielding its owner upwards of £4,000 a year, paid by prosperous tenants. Lincoln Heath, whose improve-

ment had begun in Arthur Young's time, excited his astonishment that farmers in prosperous circumstances could afford to pay 10s. an acre for land which a few years before had yielded nothing, or next to nothing to its owner. For the same land they now pay double, and at Blankney several thousand acres were let as rabbit-warrens in his time at 2s. to 3s. 6d. an acre, for which Mr. Chaplin now receives 20s., the increasing rent being accompanied in both cases with the increasing wealth of the tenants. The transition has therefore been very rapid and striking, perhaps more so than in any other county in England. It was very fortunate that when the time for this transition arrived, the leading landlords were liberal and enlightened men. Among these may be named the late Earl of Yarborough and Mr. Chaplin of Blankney. They saw the advantage of encouraging their tenants to embark their capital freely, and as leases were not the fashion of the county, they gave them that security for their invested capital which is termed TENANT RIGHT, or compensation for unexhausted improvements. Though this Tenant Right may not be strictly a legal claim, it is universally admitted in Lincolnshire, the landlord paying it when the farm falls into his own hands, and refusing to accept a tenant who declines to comply with the custom. It varies, however, considerably in different parts of the county, and appears to have enlarged in its obligations with the greater development of agricultural improvement. In North Lincolnshire the usual allowances claimed by the out-going from the in-coming tenant include draining, marling, chalking, claying, lime, bone, guano, rape-dust, and oil-cake. The following is the scale," &c., &c.

Why what in the face of this, his own testimony, does Mr. Caird mean by saying that it is not, or has not been to the interests of the landlords to adopt the system! That where it exists the agriculture is inferior, and that it depresses the letting value of the land! Why every line he writes, every figure he gives, proves that the system *has* raised the value of the land and bettered the condition of owner and occupier. This extraordinary and unwarranted antipathy would be altogether inexplicable but for one significant fact—Mr. Caird is a Scotchman; and so surely as a Scotchman comes to teach us farming, so surely does he start with the infallible dogma that there can be no good farming without a lease. In concluding his labours as a Commissioner, Mr. Caird says prophetically of the English farmer that "The wishes for leases will increase when the tenant-at-will discovers that security for his capital by Tenant Right is neither possible nor desirable"—so far about the very worst prophecy that ever was made.

Mr. Caird, in his description of Lincolnshire, as just quoted, makes mention of the Chaplins of Blankney. Let me, then, call the present owner of those fertile lands as my next witness. It was thus that Mr. Henry Chaplin spoke in the House of Commons but a few weeks since, not merely as one of the members for, but as one of the landlords of Mid Lincolnshire: "In England, especially in those parts of the country where agriculture was carried to the highest perfection, there was something which was entirely wanting in Ireland—namely, a marked, distinct, and accurate system, capable of being enforced at law, assuring the tenant that he would be amply repaid for everything that he had laid out in the cultivation of the soil in the event of his being ejected from his farm. He would take as an instance the custom that prevailed in the county which he had the honour of representing—and he did not think he should be accused of undue partiality when he asserted that his county stood pre-eminent for the excellence of its cultivation. In no county was the science of farming carried to such perfection, or capital more liberally expended upon the soil, and nowhere was the identity of interest between landlord and tenant more fully recognised, or were more cordial and kindly feelings entertained between them. And yet this was a county where leases for a term of years were practically unknown, or, at all events, were very rare. It would merely weary the House were he to enter into details with respect to the various arrangements. They were many, and necessarily so, because in themselves the operations of farming were of a very multitudinous character. Under those arrangements compensation was amply provided for everything that could be laid out in fair farming, the amount of compensation to be paid being fixed by a valuer or valuers, and a third party being called in to act as umpire if necessary. So simple was that operation, and so well known its results, that an appeal to law or a dispute scarcely ever arose; and

not the least advantage of the system was that it applied with equal effect to small or large farms. By this means security of tenure and its attendant beneficial results were attained; and, although no man could more heartily acknowledge than he did the cordial and kindly feelings mutually entertained with respect to each other by the landlords and the tenants, yet in his judgment those feelings were mainly due to the uniform operation of the just and effectual system of Tenant Right to which he had referred." Mr. Chaplin is known to be a rising man in the House, but this speech alone might make him a reputation. It will be observed that he does not depend upon cordial and kindly feelings between landlord and tenant—very good things, no doubt, as far as they go and as long as they last—but he looks at the matter in a really business-like light, and speaks to a system, marked, distinct, and accurate, capable of being enforced by law, and assuring to the tenant ample repayment for everything he has laid out. And against this, and such results, how can Mr. Caird, I say, maintain his monstrous assertion that it is not to the interests of the landlords to adopt such a system? Only go to the heart of the landlord's interest in the question, and see how his rents would rise or fall by the establishment of Tenant Right. According to the too prevalent custom, a tenant, if only duly and fairly forewarned of his going, does all in his power to leave the land as low and exhausted as, without directly infringing on any rule or covenant, he possibly can. Let TENANT RIGHT have the sanction of the Legislature; let the good farmer work under its protection, and it would be his interest to farm well well up to the day of his departure, for this very simple reason—Instead of, as in an unprotected state, gradually drawing in the use of his money, and staying the force of his ability, he would have confidence to make the most of every minute on every acre as long as he held it, knowing that just compensation would await him for what he left behind. Now take the matter of rent here. Ask any agent or any tenant what difference is made in rent to a man entering on land in a good or in a bad state of cultivation? Hear how the incomer will, in the one case plead the time he will have to wait, and the sums he will have to find before he can count on the least return. Attend to this, and only mark the effect it must of course have on the estimate. In the other case the talk is all the other way. Here is the land in a condition fit to repay as readily as that of the oldest inhabitant on the estate; and if one hesitates at the price per annum, depend upon it there are plenty of others more than anxious to take it at almost any rate of rent a man of business could put upon it. Keep up the cultivation and you keep up the rents. Lower the one, and there will be a *sequitur* in the other as inevitable as unprofitable. The time spent by a tenant in enriching at his entry, and in impoverishing at his exit, is so much time lost to himself, so much income lost to his landlord, and so much food and wealth lost to the country.

I will call but one witness more to clear up any "vague generalities," and this shall be as appropriately following a Lincolnshire landlord, a Lincolnshire tenant who has himself often been engaged in making these valuations according to custom. I quote from a letter by "Lincoln," who says: "The great interest felt at the present time in farm agreements, leases, and Tenant Right, and the frequent mention of the Lincolnshire Tenant Right system induces me to give you the leading features of that system, which has made those parts of Lincolnshire where it is adopted one of the best, if not the very best farmed district in England. Let me first mention that tenancies, as a rule, commence and expire on the 6th of April, six months' notice being required, and that leases are quite the exception. When a tenant quits his farm (and I now speak of the custom where no private agreement exists) he will be allowed for all under-draining done with tiles on the five years', and, in some cases, on the seven years' principle, including labour of leading tiles and putting in; on liming he will be allowed on the five years' principle, including carriage; half the last year's linseed and cotton cake bill will be allowed him, or one-sixth of the last three years; the whole of his last year's artificial manure bill will be allowed if used for roots; and all buildings made of wood and resting on brick or stone will be taken at their full value. The manure and the straw are the property of the landlord. These are the foundations of a system which, in Lincolnshire, has in one generation raised the rental of hundreds of acres of land from 5s. per acre to 30s., and the fee

simple from £10 per acre to £50 and £55." There is one sentence in this letter to which I would call your especial attention. This is where the writer speaks to a custom under which compensation can be claimed where no private agreement exists. There is no doubt but that the continued discussion of the TENANT RIGHT principle and the gradual spread of information on the subject have done immense good, as more than anything else to root out the frowy fusty old form of agreement that too long held something like sovereign sway in agents' and solicitors' offices. Landlords and land-stewards, as they come to be more enlightened, come more readily to introduce liberal or compensation clauses which encourage the tenant's exertions, and recognize his right to his own.

And here some would stop; but I would not. Like the Lincolnshire landlords, men who have the sense to see the advantage in, and avail themselves of the custom, need, of course, no Act of Parliament to induce them to do so. But any such argument as this is offered in defiance to the first principles of legislation. Laws are made not so much to bind over the good as to keep in order the bad, and to mete out equal justice to all; as it is clear enough that if tenants holding only under liberal landlords or enlightened agents can feel secure in this way, that equal justice is not meted out to all. In fact, we propose to stop just where and when the pressure is most required. Moreover, the elaborate agreement which minutely defines what improvements the tenant shall make and what rotation of crops he shall take, is fast going out of fashion. If a man be only to lime, bone, or chalk his land after a special contract to that effect with the owner or agent, he might just as well turn farm-bailiff forthwith, or hold under the last model Welsh agreement, which directs him how to burn his weeds and how to ask permission of his landlord if he should think of leaving home for a month or two. But then it is urged, further, that the law has no right to interfere in any private bargain made between man and man, or to put it more directly between owner and occupier. Why the law is always interfering in the bargains made between man and man. The law ratifies the agreement between the citizen and his apprentice; the law looks jealously enough to the hiring between master and servant, and the law is ready enough to throw its protection over any unfortunate man who, in any private transaction with his fellow man, has made a bad bargain in buying a horse, a house or a business. Why should it not afford its protection to the tenant-farmer?

Again, the relative positions here of the two contracting parties are, as Mr. Weller said of his grog, "neekal, and that's just the fault of it." Let the agreement run as it will, let there be agreement or no agreement, a landlord has always "a case" against an outgoing tenant for dilapidations, should the man have not acted fairly by the land. But, on the other hand, should the tenant have laid out capital on the land without full opportunity of reaping the benefit of it, he, as any lawyer will tell him, has "no case," unless this be in the bond. Thus, you see, there is a sense of equity for the one side and not for the other. But, it is said, it would be difficult or dangerous to attempt to legalise any particular custom. Why, half the statutes in the law books are little more than legalised customs, which, having been found to work well merely from force of custom, have been further emphasised by the force of law. And this is what I ask here; as against this the Tenant-Right Committee of the House of Commons says, "any attempt to make these allowances compulsory would be met by great practical difficulties," and so would not recommend it. Now if it were proposed to pass a law of details by which compensation, say for the use of bones, should be made to extend over so many years in this district, and so many the less in another, then I say with the House of Commons' Committee there would be great practical difficulties in the way. One might as well attempt to draw up an agreement that should suit all the world over. But I would propose to do nothing of the kind. I would simply have the law recognise and support the justice of the principle, which would enable a man to claim his rights, even where, as "Lincoln" puts it, no private agreement exists.

Mr. Caird said twenty years back that the wishes for leases amongst English farmers would increase; since when, I believe, there has been scarcely any perceptible increase in such a direction. I will not say why it is, but so it is,

neither landlords nor tenants in England would seem to care about leases, as some of the best farmed land in England is cultivated without any such security of tenure. But I care not which it may be, a lease like a shorter agreement cannot stand alone. In the evidence taken before the Parliamentary Committee the advocate for leases invariably stipulated for some provision towards the end of the term, as he was always ready to admit that without a proper system of compensation for unexhausted improvement even this most orthodox system of tenure could not be properly carried out.

One word more and I have done. Often as this subject has been previously discussed by the Club, I cannot but think that it comes on very opportunely just now. If I tried to read the signs of the times, I should say it was by no means improbable that the present Government took up in turn the Land Question in England; and I feel very confident that much good might follow from further inquiry. Mr. Philip Fusey, our steadfast champion, has long since departed from amongst us; but I look with even greater hope to a Parliament wherein I can find men like our present chairman, Mr. Howard, and our past chairman, Mr. Sewell Read. When that first inquiry into Agricultural Customs came on, one of the witnesses called was Mr. Chandos Wren Hoskyns, then described as a barrister-at-law, but now more distinguished as one of the members for the bucolic city of Hereford. And we have a promise of further aid here, for it was thus that Mr. Wren Hoskyns, as a witness, answered one of the chief questions put to him as an agricultural lawyer: "Do you think that legislation could compulsorily direct compensation to be given by the landlord to the tenant for those improvements? —It would be very difficult to make it an act of direct legislation; but it appears to me that powers might be intrusted to those who should direct the arm of legislation in enforcing the claim of the tenant for improvements of that kind, that had been made; not that legislation should dictate what the allowance or compensation should be, but merely that there should be a power given by the legislature, in order to authorize their decision upon such a subject, whether it be the arbitration of a single referee or umpire, or the arbitration of a board or court." I am happy to be able to agree so much with so distinguished an authority as "TALPA," who, I trust, will have an early opportunity of saying again in the House that which he said so well in the committee-room. Customs vary very much—Yes. There are some customs that are very pernicious in their effects—Yes. Customs are often hazardous or uncertain in their action—Yes. But suppose from all this variety, uncertainty, and mediocrity, we are able to cull out some custom that is particularly good, what shall we do with it? Why, make the most of it, of course; as this I contend we should best do by sanctioning its extension. In the claim we urge, as I hope I have in some degree succeeded in showing, there is nothing obnoxious, nothing impertinent, and nothing encroaching. It is an argument grounded and maintained on those wholesome ethics REASON and RIGHT (cheers).

Mr. B. LEAMON (Whitwell) said that there was no question more important than the one under discussion, and he was certain it would have weighed considerably more with them and with the public at large if the paper had been read by any other person than Mr. Corbet, the editor of the *Mark Lane Express*. That a body of members connected with the Club, after reading the various articles in that paper, should think Mr. Corbet a fit and proper person—

The CHAIRMAN: I must protect Mr. Corbet from any personal remarks.

Mr. LEAMON: I have said all I wish to say (hisses and laughter). Mr. J. SMYTH, jun. (Baldock), thought they were in duty bound, if they liked, to express their feelings.

The CHAIRMAN: But not to descend to personalities.

Mr. SMYTH: There was not the slightest personality in any way; but so long as he was an Englishman he should support his rights. He wanted Mr. Corbet to tell them how they could grow corn at 6s. a bushel, and behave loyally towards their Queen and Constitution? He asked for information from their worthy friend Mr. Corbet how they were to do it?

The CHAIRMAN: Mr. Corbet didn't rise to give any such information.

Mr. SMYTH owned he was wrong there, but he asked for information.

Mr. THOMAS (Bletsoe), who said he felt very much indebted to Mr. Corbet for coming forward in the handsome

manner he had done with so able a paper. As a tenant-farmer he entirely agreed with it. Land agents might object to the opinions which had been expressed; but the paper contained nothing that should be objectionable to a tenant-farmer. You could not expect a tenant of capital and skill to embark in a farm, and make a considerable outlay upon it, unless he had a Tenant-right agreement or a lease. A lease, no doubt, was preferable, notwithstanding what the reader of the paper had said; but some objected to a lease, and in that case Tenant Right should be supplied. He could fully endorse Mr. Corbet's views as to the payment of the farmer for unexhausted improvements made upon the farm. The land would then be farmed at the end as at the beginning of the agreement, which would, of course, be a benefit to the incoming tenant, the owner, and the community at large. It might be all very well to lay down some sort of covenant, as was often done by the land agent; but while there were many good men amongst these agents, there were a great many who had no business to presume as they did to dictate to the tenantry of the country (Hear, hear). Many land agents presumed to lay down clauses of which they knew absolutely nothing, and when this was the case, it was impossible that satisfactory agreements could be made for the tenant (Hear, hear).

The Rev. E. SMYTHIES said Mr. Corbet began his paper by some disparaging terms as to some remarks made at the Club last December, and reference was made to the question suffering from being overshadowed by a cloud of vague generalities. The original expression, he begged to say, was "vague and vapid generalities," and he did not at the present time see any necessity to withdraw that second epithet, because the generalities from which the question suffered were as vague and vapid as ever. The Club had been told that due allowance should be made to the out-going tenant, and that an alteration should be made in the present system. He maintained these expressions were of no good whatever. What farming men wanted was to know exactly what the out-going tenant was to receive—what proportion of the whole. The first departure from vague and vapid generalities which he had heard was the Lincolnshire tenant's letter, wherein was sketched out the money proportion and value of certain practical things to be allowed to the out-going tenant. Let the Club be told whether the out-going tenant was to have the whole of the last year's bill for artificial manure, half of the last year's bill for oilcake and other artificial foods, a third for the preceding year, and a certain proportion precisely defined for lime, &c. These statements would be valuable, and would guide landlord, tenant, and agent in coming to a satisfactory conclusion; but when we were told time after time that "what is right between man and man must be done," and that "due allowances must be made," and so on, nothing whatever was said that would assist two men in coming to an agreement upon a matter where agreement was desirable. One man would consider "right" and "due allowance" to be very different from the views of another, and the custom of the country, though defined enough in one part, was very undefined if we took the whole country through. Let proportions and figures be placed before them, and all that remained would be a simple question of arithmetic which the landlord and tenant could settle between themselves without any alteration or need to call in a third party. Supposing it were possible to make an agreement, it would be very difficult to frame it so that it would suit all parts of the kingdom, for even Acts of Parliament would be of no use if they merely embodied vague expressions.

Mr. WILLIAMS (Baydon, Hungerford) quite agreed with Mr. Corbet that, taking all circumstances into consideration, the Lincolnshire Tenant-right was the best that could be adopted for the tenant farmers of England. This opinion was founded upon practical observation of the working of the system. Tenant Right, admitting there were certain interests in the soil, should define what was occupation as distinct from ownership. No doubt this was an intricate subject, because, except in Lincolnshire, there were very few landlords who would take the subject in hand. In the county he had named there was no objection, but in the West of England the landlords looked several times before they would have anything to do with Tenant Right. In his neighbourhood they said that Tenant Right would be landlord wrong. They could not yet be brought to see that they would suffer no injury by granting to the tenantry that which he believed every English farmer had the right of demanding. He, himself, held that a great good

would be done if the law were simply altered on the matter of notice to quit. The law of the land at present was that six months' notice would send any tenant about his business, let him spend whatever he might in improvements. A strict Tenant Right would alter this law so that no man should be turned out of his occupation without two years' notice to quit. Nothing short of that would do, and that was a very good idea of Tenant Right. The tenant had to pay all the local burdens imposed upon the country, and it was an agreement between landlord and tenant that this should be so, and the consequence was the tenant never knew what he had to pay. Carrying his memory back 40 or 50 years he could remember a continual accumulation of burdens upon their shoulders—county police, lunatic asylums, military stores, and a host of other things. Was that Tenant Right? These local burdens were about to be increased again by an educational rate, and no man can see an end of what the tenant-farmer would be called upon to pay, and to which he never gave his consent. He suggested that the tenant-farmer should pay a proper amount of rent for the occupation of the soil, and then, in addition to that, in the same way as he paid the income and land-tax, he should be annually called upon to pay for his landlord all the other local taxes, the landlord reimbursing him as in the case of the income-tax. This was his definition of Tenant Right.

Mr. HAMILTON (Acton), as a new member of the Club, attending his first meeting, wished to join in the thanks that had been expressed to Mr. Corbet for his paper. As a small owner of property in Hertfordshire, he had for 32 years adopted the Lincolnshire system of Tenant Right. He had only had two tenants during the whole of that time, and the second paid the outgoing tenant what the custom required, so that as landlord he had no trouble whatever in the business, and he had every reason to believe that the tenants had been satisfied with the whole arrangements. The compensation clause he agreed to was that unexhausted improvement was paid for by the landlord or incoming tenant. The result was that the land was kept in perfect condition always. The first tenant had a 21 years' lease; but he unfortunately did not carry on the farm as well as he ought to have done, and he (the landlord) gave him notice to quit at the end of 14 years, and the tenant then went on for seven years as a yearly tenant. The present tenancy was yearly with six months' notice to quit. The tenant was perfectly satisfied, because if he hid out ever so much money upon the land it must come back to him in accordance with the Lincolnshire compensation clause. If this system, or a system modelled upon its principle, could be carried out throughout the entire country, it would be much better for the land and there would not be that six years' loss which was now suffered by the outgoing tenant neglecting it for three years before he left, and the incoming having to wait three years before he got it back to its proper condition. The adoption of Tenant Right in England, would therefore, not only improve the relations between landlord and tenant, but would increase our produce, and thereby tend to the welfare of the general community (Hear, hear).

Mr. LEEDS (Castle-Acre), differed from the last speaker, who thought six months' notice to quit was sufficient. Suppose a person had occupied his farm for twenty years, and had spent a good deal of money for improvements, which the landlord repaid him, no doubt during that time he had formed friendly connections, and to be called upon in six months to sever all the ties he had formed would be a hardship which it would be difficult to satisfy by compensation.

Mr. MECH thought the question before the Club was the very simple and distinct one—whether it was for the advantage of the landlord and tenant and the country at large that there should be a Tenant-right for improvements. All were no doubt agreed that on the question of leases Government could not interfere; and that if Tenant Right be for the national good our legislature had the power, if it had the will, to enact that unexhausted improvements by the tenant should be paid for to him. It was equally plain that it would be impossible for the legislature to define exactly all the circumstances of compensation according to the various soils and necessities of particular counties in England. Once let the main principle be asserted, and there would be very little difficulty in ultimately arriving, through a proper commission, at a clear notion of what agricultural improvements in this country meant. The necessity for legislation was important indeed, because, while

much had been said about Lincolnshire, and the liberality of arrangements made there, and the custom which had now become a basis accepted as law, in the county of Essex, and many others, such a system was not in operation, and could not be with present discrepant views of the various valuers in different parts. A man might spend £5 or £8 an acre in draining his stiff clay, and another £5 in chalking it—two very essential elements of improvement, and if he went out or died to-morrow, not a shilling would be allowed by the custom of Essex for that ten pounds of valuable farm improvement. This state of things, to his knowledge, could be multiplied all over the country. Therefore he wanted the Government by Act of Parliament to define and lay down the general principle, and that, as Mr. Corbet had pointed out, should include remuneration to the tenant for unexhausted improvements. Much as he admired the intelligent paper Mr. Corbet had read, he (Mr. Mechi) agreed with Mr. Caird, that for the comfort and happiness of the farmer the lease must be the first consideration. When a man took a farm with capital and means to stay upon it he did not merely give his attention to the improvement of his land, but he improved his premises, added to the minor comforts of his home and grounds. Were they to be told that farming was merely to be a blundering occupation, and that there were to be none of the refinements of comfort and society as was the case with manufacturers and traders? The lease must be the basis of all confidence in the investment of capital, and without it, except under certain exceptional circumstances, capital would not flow into the land. With the 19 years' lease in Scotland enormous sums had been invested in draining the land, erecting buildings, &c., the tenant knowing that at the end of 19 years his rent would be raised or his farm pass to another. No man, however, should be compelled to grant a lease against his will. There were many noble owners who made it a point of honour to regard fixity of tenure, and succeeding generations in one family reaped the benefits of their improvements. But men with capital, and men with strong feelings with regard to politics did not feel comfortable on going into a farm and investing money without the security of a lease. The lease therefore should be the basis of agreement, and that could not be enforced by legislative enactment. Unfortunately the liberal arrangements of Lincolnshire were the exception and not the rule, and throughout the 36 counties of England there was a lamentable want of improvement—an enormous scope for it, and there was on the part of both landlord and tenant a comfortable attachment to old and very imperfect customs very far from approaching anything like the Lincolnshire practice, which was so much to be admired, and which was so good to the country and to agriculture.

Mr. HARPER (Bury, Lancashire) also could testify from experience that the Lincolnshire custom was a good one, but it would not be good unless it were founded upon reason and truth. The great difficulty in dealing with the question of Tenant Right was the correctly ascertaining the difference between the value of the farm when the tenant entered upon it, and the condition in which he left it when he gave up his tenancy. Whatever an outgoing tenant expended in the due course of his husbandry of which the incoming received the benefit, was in his opinion Tenant Right, unless on his original entering the tenant received a like benefit without paying for it. On some farms it was the custom for an outgoing tenant to leave all the manure without any payment, and in that case when the incoming tenant came to an end of his occupation he ought to leave his manure in the same manner. This was not a satisfactory arrangement perhaps, but it was based upon the sound principle that as a tenant entered upon land, so ought he to leave it. The Lincolnshire Tenant Right had simply arisen from a long course of practice and observance of the old rule of giving and taking—of doing unto others as you would that men do unto you. It was very desirable that this most excellent custom should be better known in various parts of the country where Tenant Right was most required. He would like to ask Mr. Mechi *apropos* of his remarks upon leases whether he was really well acquainted with what was done in Scotland, and whether he was not aware that with all our difficulties of tenancy, and defective Tenant-rights in England, and rabbits, and hares, and game, we had not on the whole longer tenancies and a greater number of generations living upon the same estates than in Scotland? In Scotland they had universally the 19 years'

lease, and in the best parts of Scotland one rule which prevailed was, that about three years before the expiration of the tenancy, the tenant, unless he could make a satisfactory bargain with his landlord, began to take out of his farm all he could, which certainly was neither satisfactory nor beneficial. Possibly the law of hypothec, which gave the landlord a prior claim upon all the property of his tenant for payment of rent, might give an undue advantage and be an encouragement to the landlord to take an inferior set of, and not quite solvent tenants. He did not like to hear leases compared with a satisfactory Tenant-right like that existing in Lincolnshire and the south-east parts of Yorkshire. Let people once understand the difference between the two and he was sure this satisfactory Tenant-right custom would be carried out by agents and valuers, to the great benefit of agriculture and to improved relations between landlord and tenant. It would certainly be more beneficial to agriculture than when a lot of leases are put up to auction ("No, no.") Yes, in Scotland they were put up to auction. The landlord was protected by the law of hypothec, and he could tell them of some friends of his who had been lately dispossessed and turned out by strangers from a distance who offered a few more shillings rent per acre.

Mr. MANSELL said he thought a well-digested lease should contain covenants for the protection both of the landlord and tenant—covenants which would protect the landlord at the end of the tenancy and the tenant at the beginning of the tenancy. No reasonable man, whether farming 1,000 or 500 acres, would lay out his money unless he had some such protection for improvements for being recouped the money laid out. The basis of such a lease should be some well defined clauses to carry out a mutual arrangement between landlord and tenant. Such clauses could be as well defined in the lease of a farm as in the lease of a house. Therefore there ought to be no difficulty about it. Under a liberally constructed lease, a tenant taking a farm for twenty-one years, should feel himself free to make any number of reasonable improvements he might think proper. If he did so in the form of drainage, or manure, clauses protecting the tenant at the expiration of the lease ought to be inserted, and the landlord should be bound to recoup the tenant at the expiration of the lease for any outlay he might make for such improvements. He submitted that the mutual arrangement spoken of by Mr. Corbet between landlord and tenant would be better defined in a lease by a clause giving Tenant Right.

Mr. S. SIDNEY said if he took the opinions of the farmers of England from the feeling he saw displayed, he should come to the conclusion that the farmers thought themselves exceedingly ill-used, and that they thought they ought to have security of tenure and compensation for unexhausted improvements (Hear, hear). But he confessed he did not think that these were the opinions of the farmers at all. He did not mean that that was not what they said, but he did not think that it was what the farmers meant. The farmers of England were a numerous and powerful body, and if they chose to make up their minds as to what they wanted there would not be the slightest difficulty in obtaining it; but the fact was—and here he expected to be received with a howl of indignation—the farms of England were under-let, and let exceedingly cheap (laughter and "Oh!")—and there was an implied bargain between the landlord and tenant in those counties where there was no compensation for unexhausted improvements—where there were no leases at all—those leases which some people thought so much of. The real meaning was that the landlord said: "You take my farm. I can turn you out at six months' notice. You won't trouble me about my game. When there is a general election you will vote in my favour. If my wife's health is proposed at dinner, though you don't exactly like her, you will drink it with cheers. If you do that I will not disturb you (laughter)—you shall not be troubled about the way in which you farm your land." That was the plain truth. The farmers might shuffle here and there, but that was the real thing. When he was young he attended a farmers' dinner, and he heard one toast with great indignation. It was proposed and received with great cheers. It was "Liberal landlords and grateful tenants." As long as there were grateful tenants they would not be able to make a bargain with their landlords. If they were now discussing whether or not farmers ought to have security of tenure, there could be no two opinions about it. It was perfectly absurd to suppose that a farmer should expend a large amount of capital unless he

know that whether he lived or died, whether he remained on the farm or left it, he should have restored to him the money that he had put into it. It was no use disguising the fact; the farmer was no different from the shopkeepers and tradesmen of London: unless they have confidence in laying out their money, it would come back to them; and if they were disappointed, they had only themselves to blame, because they would place confidence without having sufficient security for so doing. Comparisons had been made between the farmers of England and those of Ireland. There was no comparison at all. Unless a man in Ireland could get land, he could get no living at all. Then in Ireland they were not in a position to make a bargain, but in England the farmers were in that position, because 20 years ago they said they were all going to be ruined, but they were still existing, and yet they had accepted terms of their landlords. Under these circumstances Mr. Corbet had rendered an essential service by describing exactly the legislative course of events since that period and if there had been a series of grievances, the farmers would long since have banded themselves together to redress them. He was astonished that one of the first speakers objected to the manner in which Mr. Corbet put the subject forward. Why, Mr. Corbet ought to be treated as the Prodigal Son—the fattened calf ought to be killed for him (laughter); for this was the first time he had heard him read a paper in which there was not some exceedingly ill-natured remark made about somebody (renewed laughter). The Chairman had, as a professional matter, to watch the course of public opinion; and he thought the Chairman would agree with him in thinking that the present was a time of great change—a time when the farmers would not feel themselves bound to follow the opinions of their landlords so much as they were at present. Whenever that time came—whenever the votes of the farmers were not the property of the landlords, they would be able to carry compensation for improvements, or establish leases—whichever they pleased.

Mr. L. A. COUSMAKER said he remembered hearing in that room that the man who farmed his own land had a fool for his landlord. If so, he must be a fool himself, for he had farmed his own farm for thirty years (laughter). His remarks at the Club had always been made, not in the interest of landlord or tenant, but in the interest of agriculture; and he hoped the observations he might in future make would always be to that effect. The question of tenant-right appears to be a very simple one. No doubt tenant-right, properly defined, would be most useful in this country, and might supersede, to a certain extent, what was generally called "the custom of the country." He did not think it could supersede the custom entirely, because custom differed so much in different localities that certain customs at one place would not be applicable at another place; but it would be a most useful thing if a good tenant-right could be established in combination with the customs of the country, so as to form a basis upon which all future leases should be granted. To upset existing leases would be unfair and unjust. All improvements made by the tenant might not be considered improvements by the landlord, and it would be very hard for the landlord to be pledged to a Tenant Right in respect of them. The landlord should have fair play as well as the tenant. If any tenant wished to have any improvements carried out the landlord should give his consent in writing; and when that had been done the improvements should be made, and the tenant paid; but the tenant ought not to be entitled to compensation on leaving the farm in respect of improvements to which the landlord had not consented. Those were his notions, and he spoke for both parties—landlord and tenant. As the basis of an agreement, he thought it would be a most useful thing; but at the same time no Tenant Right ought to upset an agreement between two parties. Before an agreement was made both parties were free—the landlord to let his land to the best tenant he could get, and the tenant was free to get the best farm he could obtain. Let them be careful in making an agreement, but after it was made no Tenant Right in the world ought to upset it. What he asked for was, make a fair Tenant-right, define properly what the Tenant Right was, and then let the agreement take place between the two parties, the Tenant Right being the basis of the agreement; then after that both parties should keep to their agreement.

Mr. W. J. EDMONDS (Lechlade) said it would be natural

for landlords to ask why they were discussing a subject which thirty or forty years ago would not have been considered of any consequence. He would remind them that thirty years ago the farm implements used were only ploughs, harrows, and rollers, but that now the farmer spends £100 where he formerly spent £1 on implements. It was the same with manure, where the farmer formerly spent pounds he now spent hundreds of pounds; and with regard to oil-cake also, years ago the farmer only spent £10, where now he would spend £100. It was for these reasons that they thought it necessary that the farmers should have Tenant Right, but if they did not get Tenant Right they must have instead of six months' notice a two years' notice. They might be laughed at for talking of two years' notice, but gentlemen who had leases had practically twelve or fifteen years' notice. If instead of taking a lease for twelve or fifteen years, they took it for three years, with two years' notice, the farmer would go on in his occupation probably his whole lifetime at the very same rent; but with a fifteen years' lease they might expect, at the end of that time, that the landlords would call upon them for increased rent, on the ground that the land had considerably increased in value to what it was fifteen years before; so that he considered the three years' lease with two years' notice preferable. He certainly was in favour of leases. With their present machinery, with the outlay farmers were called upon in the present day to make, there ought to be leases, because though a common year's tenancy with six months' notice to quit might be very convenient under a good landlord as long as he lived, there might be a death, or a change of circumstances; and he, therefore, did not think it businesslike to have a yearly tenancy with six months' notice. He thought a Tenant Right might be preferable to a two years' notice to quit, because there would then be no temptation to run out the farm at any time.

Mr. MASSEN (Pendeford) said that, referring to the last speeches, a two months' notice to quit would be called by the lawyers a two years' lease. Mr. Sidney appeared to come to the meeting as their catechiser, chastiser, and adviser; and he quite agreed with a good deal he had said, but he thought he began rather upon the wrong tack. He said it was the farmers' own faults, but he (Mr. Masfen) said it was not so. The area of Great Britain was limited, and there were more applicants for farms than there were farms for them. That was the same in most agricultural districts, but the farmers had not only to contend against that, but they also found that gentlemen who had made fortunes in business, and who could afford to lose money over farming, occupied many farms because farming was a gentlemanly occupation. Mr. Harper said that a man might go on living on his farm on the same terms. That was just the very point they were discussing that evening. It was from the very fact of men going into bad farms and leaving them in a good state, that made the English farmers dissatisfied. A farmer on going in might probably find two-thirds of his straw in stacks or heaps about the field and not worth 5s. an acre, and he would have to provide his manure which ought already to have been in the ground. How did that arise? From the fact of the introduction into the agreement of clauses providing for the retention of the straw, so that when it came upon the land as manure it was not worth 1s. 6d. a ton. He believed that was really the system that had been pursued from the ignorance of men in many districts who had had the management of estates entrusted to them. An old member of the Club made the very trite remark at a recent meeting that those gentlemen ought to undergo an examination before they were allowed to manage an estate, just the same as the learned professions. He thought so too. Mr. Sidney had made some wholesome remarks. It was not pleasant, however, to be condemned. It was more pleasant to be flattered; but he cared not for that. He (Mr. Masfen) did not look upon Tenant Right as a tenant's question, but as a landlord's and a national question too. A Tenant Right would increase the produce of the country, and give to the landlord a class of tenantry we did not see now where liberal covenants did not exist. He believed they were doing that which would be to the farmers a great security, and to the landlords an additional security, and to the community an advantage. It was one of those questions in which the whole community were directly interested. The tenant farmers were not more interested than the community generally. It was ridiculous to suppose that a landlord was going to have his

rights infringed upon when he was asked by the tenant for an agreement. If any idea of that sort was in existence, Mr. Corbet had dispelled the illusion by his reference to Mr. Chaplin's speech in the House of Commons on the 12th of March last, in which it was shown in as plain language as was ever used that the Lincolnshire custom had as greatly benefited the landlords as the tenants and the community at large. So well was that custom defined, that very seldom were the services of an umpire required; and the landlord had rarely very little to do with the arrangement, except that he secured to himself a better class of tenant; and, as regarded putting his hand in his pocket to pay for it, he did not do so. That was what the farmers wanted the landlords and the community at large to know thoroughly. He did not think there was any fear of the farmers complaining that they should be ruined. Mr. Sidney, he knew, referred to the repeal of the corn laws; but the farmers had struggled through that, though only with their necks just above water. He did not believe that the ear which had appeared so deaf to the farmers would be held in the same position as it had been heretofore. In his own neighbourhood there was a greater determination of the landlords to listen to the entreaty, and in several cases agreements have been brought forward and accepted by the landlord of a nature bearing very favourably upon those of some fifteen or twenty years ago.

Mr. F. SHERBORN (Bedford) said Mr. Corbet had come forward in a handsome manner on the subject of Tenant Right, for which the Club were all indebted to him. He was very much pained to hear such unseemly dissension as was exhibited in the early part of the meeting. Discussions of this sort should be of a friendly character. As regarded Tenant Right, he looked upon it as the right of the tenant to fulfil his engagement to the landlord, and the right of the landlord to fulfil his engagement to the tenant. He thought the law would be a sufficient protection to all parties to such a bargain.

The CHAIRMAN: The time has now come when we must draw this discussion to a close. I really think, gentlemen, that some of the speakers in the early part of the evening could not have heard distinctly the remarks of Mr. Corbet, or they would not have accused him of dealing in vague generalities, such as "the custom of the country," "due compensation," and other such phrases. Mr. Corbet, whilst alluding to the stock phrases and, as I understood, condemned them, wound up with a description of the Lincolnshire tenant-right, which he strenuously, as I understood him, advocated for adoption throughout the country. I believe, gentlemen, that his paper delivered here to-night will live as long, and will do as much good, as his prize essay on the same subject. Mr. Corbet has not, to my mind, mis-read the signs of the times when he gave expression to the opinion that the time is not far distant when the Legislature of this country will entertain the question of English Tenant-right. I know that there is a very growing impression amongst the members of the House of Commons that the Irish Land Bill must be followed by an English Land Bill—indeed, that the one is a corollary of the other. Mr. Corbet, however, drew a distinction between the Irish Tenant-right and the English Tenant-right; and he fell into one error, or, at all events, there was one serious omission in his description of the two systems. The English law recognizes the established custom of any county in England, and the Courts enforce those customs; but in Ireland the law takes no cognizance whatever of such customs. The Irish tenant, however he may have improved his farm, notwithstanding it may be the custom of the country to give compensation, cannot go into a court of law and enforce the custom; even the Ulster custom cannot at present be enforced in any court of law. It was this broad distinction between the two countries which led to so much animosity on the other side of the Channel, and finally to the Legislature undertaking to deal with the question. When a custom is established in England, like the Lincolnshire Tenant-right for instance, the Lincolnshire tenant can go to our English Law Courts, and those Law Courts will enforce that custom. Therefore there is that very palpable difference between tenant-right in the two countries. I believe, gentlemen, we are not very far, it may be some years, but no very long time will elapse before the legislature must be called upon to deal with this question of Tenant Right in England. Things cannot remain in their present unsatisfactory position. A landlord may sue his tenant for dilapidations, but the tenant,

no matter how great the improvements he may have made, cannot sue his landlord for compensation. The law, therefore, is one-sided. Mr. Edmonds has referred to the great change of circumstances which high farming, and other considerations have produced. High farming alone must eventually compel the recognition of the rights of the tenant-farmers in England. It has been said by some speakers that the compensation to be given to the tenants should be defined. Now, I think this Club, or the legislature, would find it difficult to define the amount of compensation to be paid to a tenant. A uniform scale applicable to the variable conditions and circumstances of the various parts of England is impossible. Mr. Mechi alluded to this difficulty. The Government in drawing up the Irish Land Bill had also experienced the difficulty in fixing any uniform scale of compensation, and they wisely left it to be decided by local arbitrators. Mr. Cousmaker raised a very important question, and that is the right of a tenant to make improvements without the consent of his landlord, and he advocated that the landlord should not be called upon to make compensation for such improvements. In the interests of the public, it would be intolerable that the tenant should have no claim for compensation under those circumstances, because a landlord may be a very ignorant person. He may not only not know what is to the interest of his tenant, but he may be ignorant of his own interests; and what the public is most concerned with is that he should not stand in the way of the general advancement of the country. It is one of the fundamental principles of law to afford protection to the weak against any undue exercise of power on the part of the strong; and, I think, seeing the circumstances of this country, as alluded to by Mr. Masfen, where three tenants are looking for one farm, the State is perfectly justified, in the interests of the public, in stepping in to protect the interests of the tenants. I have often heard it remarked of late, that the rights of property are not held so sacred as they were in times past, and great evils are foreboded of that growing feeling. Now I believe that the rights of property in this country were never better understood or more fully recognised than they are at present. Time was when it was an accepted doctrine in this country that a man had a right to do as he liked with his own; but I believe we have outgrown that, and the people of England now take a very much broader view of the rights of property. They believe that there are certain duties attaching to property, as well as rights to be exercised. If a man, or a class of men, so manage or control their property that the full benefits are not derived from it by the community—if, for instance, a landlord stocks his tenants' farms with game, or avails himself of improvements made by a tenant without recognising the right of the tenant to the advantages which he has created himself, or if for insufficient reasons he evicts the tenant from his holding—I say, then, that the State is perfectly justified in stepping in, and putting the law in such a form that the tenants and the public shall not be damaged by such arbitrary course of conduct on the part of any owners of property. I believe, gentlemen, that nothing would tend more to the advancement of agriculture in this country, and that nothing would tend more to the benefit of the landlords than a well-considered Tenant-right; and I believe that the paper we have heard read to-night, and the discussion that has taken place, will hasten that desirable end.

Mr. CORBET, in reply, said it had been alleged in the outset that he was not the proper person to bring this subject forward. He had introduced it at the urgent request of two of the chief members of the Club—the Chairman, Mr. Howard, and Mr. S. Read. He wrote and asked Mr. Read to bring it on, and Mr. Read replied, in a letter, that he considered he (Mr. Corbet) was the proper person of all others to bring it forward. He might go further and say with regard to the paper, as it would go to the country, that if ever he did his duty to the Club he had done that night. He had told them what the Club had done towards obtaining Tenant Right in times past, and he had told them how they had worked and gone before the Government. One of the speakers said that he (Mr. Corbet) could not define those vague generalities—that he could not say what the "custom of the country" was, the "duties of the landlord," and "unexhausted improvement." He would refer again not only to his paper but to the book which he held in his hand, which enabled him to define any custom in England. He could tell all the varieties and forms of custom and valuation, where custom was recognised, &c., but he did not go into all those questions, he took one—

pecial custom—that custom had been defined by Mr. Caird, who objected to it—it had been defined by Mr. Chaplin, a landlord, who had advocated it—it was defended by Mr. Pusey. Then did they mean to say that Tenant Right was wrong, and that he (Mr. Corbet) was not a proper man to speak to it? He would speak to it in the face of any man in England (applause). He might pass over three or more speeches, and come to an essential point raised by Mr. Mechi, who said that leases were very good things, and defended Mr. Caird. He (Mr. Corbet) had been particularly careful to say nothing against leases, the agitation for which had been going on for the last thirty or forty years, although little had come of it. There might be many reasons, as Mr. Sidney had said, the farmers should be willing to take whatever the landlords chose to give them. They must do this and do that, and drink the health of the landlord's wife, and so on; but even at the end of Mr. Sidney's speech he came to admit that there was something coming—some change looming in the future. Why,

if the paper he had read had anything in it, it spoke to that change. The whole tone of the speeches was also to that effect, and he believed they were on the advent of a change. As regarded the Chairman's observation as to his omission in drawing a distinction between the Tenant Right in Ireland and England, he would only remark that the Irish Land Bill if passed would sanction the Ulster principle; and it was assuming thus much that he drew his definition (applause).

Mr. BRADSHAW proposed a vote of thanks to Mr. Corbet.

Mr. T. HORLEY (The Fosse) in seconding the resolution, said the meeting was very thankful to Mr. Corbet for his paper; and however some of them might differ from Mr. Corbet, yet they all knew that whatever he said was said honestly and straight forwardly.

The resolution was carried unanimously.

A vote of thanks to the Chairman concluded the business.

THE TENANT-RIGHT QUESTION IN ENGLAND.

At a recent meeting of the Institution of Surveyors a paper was read on Farming Covenants, and at the May meeting of the Farmers' Club a discussion took place on English Tenant Right. It may be interesting to compare these demonstrations the one with the other, the more particularly as the two Societies may be assumed to represent two classes in the State. A surveyor, as we take it, if properly qualified to speak to the nature of Farm Covenants, should be something of a land valuer or agent; and at the Farmers' Club on Monday evening Mr. Thomas, of Bletsoe, said: "It might be all very well to lay down some sort of covenant, as was often done with the land agent; but while there were many good men amongst these agents, there were a great many who had no business to presume as they did to the tenantry of the country. Many land agents presumed to lay down clauses of which they knew absolutely nothing, and when this was the case, it was impossible that satisfactory agreements could be made for the tenant." This brings us at once to the point; but Mr. Squarey, for the engineers or agents, had in some measure anticipated an answer, as the opening sentence of his address sounds sufficiently encouraging: "The principle which ought to govern farming covenants would seem to be, that the tenant should have the freest and most unrestricted use of the lands and premises, consistent with the maintenance and yielding up of the freehold at the end of his tenancy in an unimpaired and uninjured condition." Here we see that the most desirable system of Farming Covenants is that in which there are as few covenants as possible. Something of the same kind was advanced at the Farmers' Club, when it was declared that "the elaborate agreement which minutely defines what improvements the tenant shall make, and what rotation of crops he shall take, is fast going out of fashion." Still, however, with any such liberty of action, the Institution of Surveyors stipulates for something that shall insure the freehold being yielded up at the end of a tenancy in uninjured if not, indeed, in improved condition. And how is this to be arrived at? At the Farmers' Club, as might have been expected, there was an almost unanimous expression in favour of the English Tenant-right principle; and it is satisfactory to say that the Institution of Surveyors goes very much in the same direction. Mr. Squarey "thinks that the cultivation and production of farms under these shorter tenancies may be greatly improved by the concession of a Tenant Right for oilcake and artificial manures applied to green crops within a reasonable period of the termination of a tenancy: I do not suggest the details of such Tenant Right, but the experience of Lincoln-

shire and other counties would be a valuable reliable foundation for the extension of the practice over the country."

This is precisely in accordance with the preponderance of opinion at the Farmers' Club, where the opening paper was against going into details; whilst Mr. James Howard, the chairman of the evening, said: "I think this Club, or the legislature, would find it difficult to define the amount of compensation to be paid to a tenant. A uniform scale, applicable to the variable conditions and circumstances of the various parts of England, is impossible." And Mr. Mechi maintained, "It was plain that it would be impossible for the legislature to define exactly all the circumstances of compensation according to the various soils and necessities of particular counties in England. Once let the main principle be asserted, and there would be very little difficulty in ultimately arriving, through a proper commission, at a clear notion of what agricultural improvements in this country meant."

A more "tender" question or phase of the question is that which would broach broad legislation to establish the principle. A Lincolnshire landlord, when upholding Tenant Right in the House of Commons recently, defined this as "a marked, distinct, and accurate system, capable of being enforced by law;" while a Lincolnshire tenant has lately in our own columns referred to the custom by which the tenant is repaid for his outlay "where no agreement exists;" and the Institution of Surveyors, with Mr. Squarey for its mouthpiece, is manifestly in favour of making custom as strong as possible, altogether independent of agreement: "Where the land on which a crop of turnips has been consumed is given up to an incoming tenant, as an entry for his wheat crop, custom has, during the last few years, established the payment of half the value of the tillages and artificial manure of such preceding crop to be paid by the incoming tenant. It is a matter of regret that the value of oilcake, or other artificial food, does not, without special agreement, come into the same category." Mr. Squarey adds that custom in this direction is being quietly but certainly established; but is it extending as fast as it should do? To epitomise the argument as offered to the Institution of Surveyors it comes to something of this. There should be covenants, if any, so liberal as to afford the tenant full liberty of action until towards the close of his term, when restrictions as to cropping and so forth should be balanced by allowances for improvements not worked out. And so Mr. Squarey is "certain of great general increased production of all farm produce, from the conviction that, with perfect liberty of action, a farmer will only sow his land

when it is in the fittest and ripest condition for perfecting a crop; the conditions incident to such fitness involving the growth of large proportions of green crop, and the consequent maintenance of a great stock of sheep or cattle." Whereas, at the Farmers' Club, the Chairman thus summed up the case: "I say that nothing would tend more to the advancement of agriculture in this country, and that nothing would tend more to the benefit of the landlords than a well-considered Tenant Right."

All this we say is sufficiently encouraging. For many years now we have continued to advocate a principle with which this Journal, we are proud to say, is and has been especially identified. Through evil and through good report, in the face of impotent abuse or cold neglect, we have maintained the justice of a claim that is at length coming to be generally admitted. The proceedings at the Farmers' Club speak significantly to this; but the proceedings at the Institution of Surveyors more

significantly still. There was a time when Societies of land-agents and others met together rather to retard than advance the English Tenant Right principle. Their attitude was then one of opposition, while it is now one of co-operation. But we may go further still. Much good, no doubt, has already been done by discussing the subject; but it will not end now in the mere talk of tenants one with another, or, as Mr. Thomas would put it, in teaching agents their business. "I know," said the Chairman of the Farmers' Club the other evening, "that there is a very growing impression amongst the members of the House of Commons that the Irish Land Bill must be followed by an English Land Bill; indeed, that the one is the corollary of the other." We have ourselves more than once of late ventured to hint at what was coming as a step for which the country was quite prepared. There is no matter that needs more looking into, and there is none, where from improving the condition of the tenant-farmer, more general good would follow.

THE LAW OF HYPOTHEC.

The monthly meeting and dinner of the East Lothian Agricultural Club took place at Haddington. There was a good attendance, with Mr. Scot Skirving, Campton, in the chair.

The CHAIRMAN said that the motion of Mr. Harvey, of Whittingham Mains, authorising the standing committee to call a special meeting of the club, if they thought that necessary, with reference to the game laws and the promised measures in Parliament in reference thereto, should remain in force until the Bill of the Lord Advocate was brought before Parliament, which he thought would be very shortly. He thought it would be unnecessary to go into a discussion on the subject at present. It was no doubt true that, if they did, the Lord Advocate would get a good deal of information from the reports of the discussion. But he doubted his lordship had been studying the discussions of the club very carefully for the past year; and it would therefore be unjust in them to think that he had not framed his Bill in accordance with the opinions of the East Lothian Agricultural Club, especially as he could not have a better opinion on which to found it. In these circumstances, he (the Chairman) proposed that they should postpone the discussion of this subject till next monthly meeting, by which time the Government measure would be before the country.

The suggestion was adopted.

Mr. HORN (Fentonbarns) said there was another question in which he felt even a deeper interest than he took in the question of the game laws—that was, in reference to the law of hypothec. In regard to the legislation that should take place on that subject, the East Lothian Agricultural Club was unanimous; and he regretted that there was so little prospect of anything being done in Parliament this session in regard to it. The fact was that Parliament seemed so intent on doing justice to those that made the greatest noise, that there was no likelihood of any measure on that subject being introduced this session. He had, however, a letter in reference to it, which he thought it would be right to read to the meeting, from the Hon. Charles Carnegie, M.P. for Forfarshire, with whom he had had frequent communications. The letter was in the following terms:

"House of Commons, March 28, 1870.

"My dear Sir,—You will observe by the papers that, in reply to a question of mine, the Lord Advocate has stated that 'Government are not prepared to bring in a bill on the subject of the law of hypothec in this session of Parliament, but have promised to consider the subject in the course of the autumn, and on an early day next session to announce whether they are prepared to legislate upon it.' I regret much that they have come to this decision, as I had sooner that they had prepared and brought in their measure this session, even had it avowedly been only in order that it might be printed and discussed during the recess. It is quite impossible, in the

present state of public business, for me to have any chance of carrying our measure in this session. Such is not only my own opinion, but that of all those members known to hold opinions similar to ours on this subject that I have had an opportunity of consulting. I therefore do not mean to attempt it. Had I not been informed on good authority that the Government had it in contemplation to deal with this subject in this session, I should have introduced my bill on the first possible day after the meeting of Parliament; and I had even prepared a notice to that effect, but was induced not to go on with it on the ground that to do so might be injurious to the cause. I have some hope, however, that the discussion of land questions in the two Houses of Parliament will rather clear the ground for us, and that the delay may prove beneficial to the ultimate success of the measures that you and I have advocated on this most important subject.—Believe me yours very sincerely,

(Signed)

"CHARLES CARNEGIE."

He (Mr. Hope) could only add that he very much regretted that no measure had been introduced on the subject, while he could not see that they could do anything to obviate that in present circumstances.

Mr. HARPER (Shawden) thought that they could not do less than express their cordial thanks to Mr. Carnegie for the trouble he had taken in connection with this question, and for the information he communicated regarding it, through Mr. Hope, to this club (loud applause). He hoped that the Scotch members of Parliament would not forget that there were two great questions which agitated the minds of the farmers of the country during the last election, and on which a large number of their members were pledged to urge the Government to introduce measures with a view to legislation—he meant the amendment of the game-laws and the law of hypothec—

Mr. HORN: The abolition of the law of hypothec?

Mr. HARPER: Yes; the abolition of that obnoxious law. The Scotch members were remaining remarkably quiet on these subjects at present; but he hoped that they and the Government would not forget that the representatives of the agricultural interest in Scotland were just as earnest and anxious to have these laws considered and dealt with as they were during the last election (applause). Many of the farmers had made great sacrifices in returning Liberal members to Parliament ("Hear, hear" from the Chairman). He hoped the meeting would not misunderstand the ironical "Hear, hear" of Mr. Scot Skirving (cries of "Hear, hear"). If the Chairman had been in Perthshire or in Dumfriesshire during the election contests in these counties, he could not have failed to become aware of the fact that there were many farmers there who had made great sacrifices in returning Liberal members to Parliament. While they desired to see justice done to Ire-

land, they at the same time expected to see justice done to themselves in regard to the operation of these laws; and if that were not done, he believed the country would cry "shame" to those Scotch members who were remaining quiescent in Parliament on the subject.

Mr. DURIE asked what was the nature of the justice to Ireland to which Mr. Harper referred? He would ask what had the Irish done more than the English or Scotch that the landlords in Ireland were to be deprived of the management

and control of their property? He could not see that; but if that were regarded as giving justice to Ireland, they might soon have the same justice extended to Scotland.

Mr. HARPER: At the time of the last election contest, the great question before the constituencies was that of the Irish Church. It was the measure on that subject to which I referred.

The vote of thanks to Mr. Carnegie was then passed unanimously.

THE CARRIAGE OF SHEEP.

LINCOLN COUNTY COURT, MONDAY, May 8th.

WILLIAMS v. M. S. AND L. RAILWAY COMPANY.—This was an action to recover the sum of £49 10s. 2d. for loss sustained by the non-performance of a contract of certain sheep from Lincoln to Dublin. A jury was empanelled to try the case. Mr. Toynbee, in opening the case, said the plaintiff was Mr. Charles Williams, of Salisbury, who also had a farm at Carlton-le-Moorland, near Lincoln. The defendants were the Manchester, Sheffield, and Lincolnshire Railway Company. The action was to recover £49 10s. 2d., the loss alleged to have been sustained in consequence of the defendants not having fulfilled a contract made on the 3rd September last, for carrying twenty rams from Lincoln to Dublin. Mr. Williams was a ram breeder of great eminence, his sheep having attained a great reputation, not only in England, but in Ireland. On the 3rd September, he had twenty rams which he was anxious should be sent to Dublin as soon as possible, and he contracted with the Manchester, Sheffield, and Lincolnshire Railway Company for them to be carried from Lincoln station to Dublin, by way of Brunswick station at Liverpool, and for their carriage he paid £7 5s. 9d. The contract, which was in writing, did not say anything about the conveyance of the sheep from Liverpool to Dublin, but it was for the defendants to provide for the same. The shepherd brought the sheep to Lincoln on Friday, the 3rd September, and they were sent off by the first train. They reached Liverpool at half-past four o'clock in the afternoon, and then one of the Company's servants went with the shepherd to within one hundred yards of the Dublin Steam Packet Company's boat, the Manchester, Sheffield, and Lincolnshire Company being connected with that Packet Company. The shepherd tendered the sheep to the Packet Company, who refused to forward them. The sheep had had to walk three miles from the Brunswick Station to the Dock, and in consequence of the refusal by the Packet Company to take them, the shepherd was obliged to take them back and provide a place for them. They had to be kept at Liverpool until the shepherd could communicate with the auctioneer in Dublin, who was going to sell them. In consequence of the Company's refusal to take the sheep, the shepherd was compelled to take them round from Liverpool to Holyhead, where they were put on board a vessel and sent to Dublin. Instead of the sheep being only twenty-four hours on the journey, they were ninety-six hours, and when they arrived at Dublin they were perfectly exhausted, it being impossible to get sheep to eat while in a railway carriage or on such a journey. The consequence was the animals only fetched from £11 to £13 a-head. The plaintiff now claimed under the following heads: £4 13s. 8d. for extra carriage from Liverpool to Dublin, via Holyhead; £1 5s. for extra expenses incurred by the shepherd; £3 for extra food required for the sheep; a loss of £2 a head; and his (Mr. Williams') expenses attendant on the delay; making a total of £49 10s. 2d.—Richard Simms, shepherd for Mr. Williams, was then called. He said: I have been in the habit of taking his sheep to Dublin. On the 3rd September I brought twenty rams to Lincoln station. They were to be carried from Lincoln to Dublin, and I paid £7 5s. 9d. for the carriage. The conditions on the note were read over to me.—The note was handed in, and the Judge pointed out that the restriction as to damage to sheep was £1 a-head, unless a declaration was signed as to their value and an insurance paid upon them.—Mr. Toynbee submitted that the Railway Company must satisfy the jury

that the conditions named were reasonable.—The Judge said that was a point for the court and not for the jury.—Simms was further examined and said: We went by the first passenger train on the Friday morning, and we reached Liverpool at 4.30 the same day. I was then three miles from the wharf where the Dublin steamer was going from. I travelled the sheep down there. One of the Railway Company's servants went with me to within 100 yards of the steamer. He pointed out to me where I was to go, and I then told him I could find my way. I went to the Captain of the steamer, but he refused to take the sheep. I was there half-an-hour before the time of the packet's departure. The only reason the Captain gave for refusing to take the sheep was that the foot-and-mouth disease was bad in England and cattle were not allowed to go over. When I found I could not get the sheep taken, I spoke to a man who was going over to Dublin, and asked him to name the matter to Mr. Gryan, the auctioneer. I then got a place for the sheep as soon as I could, but it was 10.30 before I found one. The next day I took train for Holyhead, and went from thence to Dublin in a vessel. I did not get into Dublin until Tuesday afternoon, and the sheep were then in bad condition. I paid £4 13s. 8d. for their carriage from Liverpool to Dublin, and the food I had to give them was worth £3. I was kept on the road three days. When I brought the sheep to Lincoln, they were sound and active, and in good health. If I had got them over to Dublin in 24 hours, they would have been all right.—By Mr. Hayward: I had not been on the direct route from Liverpool to Dublin before. I had before gone round by Holyhead.—Mr. Williams, the plaintiff, said: I live at Salisbury, and also occupy a farm at Carlton-le-Moorland. I have twice sent sheep to Dublin. The sheep in dispute were active and in very good condition when they left my place. I sent them on Friday, the 3rd September, and they were advertised to be sold on the following Friday. Had they been properly forwarded they would have had six days' rest. They had only three days to recover from a journey of 96 hours, instead of six days for 24 hours. I saw them in Ireland on the Wednesday morning. They were then in an exhausted state, and I could scarcely recognise them.—Mr. Charles Clarke, of Scopwick, a celebrated breeder of rams, said he had heard the evidence given, and in his opinion the sheep would deteriorate at least £3 a-head.—Mr. Toynbee said he had further similar evidence.—Mr. Hayward thought it was not necessary.—Mr. Toynbee, on being pressed by the Judge, admitted that he could not obtain the £1 10s. 6d. claimed by the plaintiff as personal expenses.—Mr. Hayward said he would submit to a verdict for the expenses incurred, but not for the deterioration, as he held there was a determination of the contract by the plaintiff's shepherd taking the sheep away from the Company and forwarding them by Holyhead.—On Simms being interrogated, he said that the officials at Brunswick station told him they could not forward the sheep to Dublin by their route.—The Judge suggested that a verdict for £27 18s. 8d. should be taken on the ground of the condition of the note.—Mr. Toynbee argued against the same, but his Honour held that the condition was not unreasonable, and he therefore directed the jury to return a verdict for the plaintiff for £27 18s. 8d., being at the rate of £1 a-head for the deterioration of the sheep, and £7 18s. 8d. for the extra costs incurred.

THE PRICE OF WHEAT IN AMERICA.

Letters from New York complaining of the low price of wheat continue to be received here, lamenting the almost fatal influence this depression exercises upon the agriculture of the United States. We have on various occasions endeavoured to show the farmers of that country that the principle on which they are acting must necessarily produce a fall of prices on the markets to the supply of which their shipments of wheat are destined; and although the exaggerated estimates of both what they do and what they could do for that purpose are little to be depended on, we see enough to be convinced that any extraordinary efforts on their parts or any superabundant produce of the land under culture must seriously affect the European markets. The farmers have no other outlet for the excess over the home demand, and the sale of the surplus is what they look to as the only source of the remuneration of the year's work. Some of their statisticians assure us they would be able to supply the whole of Europe with bread-corn; and we will agree with them if they will allow us to add the word *if* to the boast, there being two impediments to its fulfilment, under which anything approaching to this is simply impossible. The first is the want of hands to cultivate the soil; the second, that whilst the expense of production would indefinitely increase, the return price would in an inverse proportion decrease as indefinitely. These two obstacles would effectually frustrate the object of raising the produce—namely, a living profit—which is the only aim of the producer.

We have had a small taste of what any operation of the kind would have, both here and in America; but small (comparatively) as the experiment is, it is quite sufficient to justify us in saying that the farmers of the United States cannot increase their wheat culture to any considerable extent without so reducing the price in Europe, and consequently in their own markets as well, as to render its culture impossible. The entire amount of wheat and flour imported here in 1869 was 10,416,159 quarters, of which 8,588,984 quarters, or upwards of one-third, was from the United States, being more than double what was shipped thence to the United Kingdom in 1868. A large proportion, too, of this was sent during the last four months of the year, which, coupled with increasing shipments from other countries, caused the unnatural depression on the corn markets, both here and in all foreign countries. In the United States the effect was felt more powerfully than even with us. The price of wheat at Chicago, on the third Monday in April, 1869, was 1 dol. 47c. per bushel (or 6s. 1½d.), and in January, 1870, it had fallen to 76c. per bushel (or 8s. 9d.). "It would be useless," says one writer on the subject, "to seek for the causes that have concurred to produce such a reduction; but I ought to point out at least the influence that the exchange of gold, which has fallen to 120 (114½), has exercised upon the movement by destroying the confidence of the holders, and rendering loans difficult to those merchants who, having hope in the future, wish to continue holding their wheats. Thus, they were compelled, under the most unfavourable circumstances, to overstock the markets with large quantities of wheat and flour; but the principal cause of the decline is 'speculation for a rise,' in which they engaged on the ground of the very deficient returns of the previous harvest in Europe. We must no longer charge speculation with producing the price of 8 dols, 10c. (12s, 1½d.) per

bushel, paid in April, 1867; but with reducing the price to 1 dol. 30c. (5s.) per bushel, which lately has been the price of the same wheat."

Former speculation may have had something to do with the very high price of 1867; and a similar operation has certainly contributed to the present very low one; but, on the other hand, the American writers wholly ignore the fact that it is on account of the over-supply of the European markets that in both countries the farmers are complaining that the price of wheat is unremunerative. There is a third reason for this result, which, indeed, we have too frequently urged for the reader to be ignorant of it. Taking Chicago for our stand-point, the expense of getting grain to the eastern seaboard cannot be reduced. On the contrary, every mile the cultivation is driven farther westward increases the expense both of cultivation and of transit; whilst the sparseness of the population renders the local demand so small as to make it a mere trifle in comparison with the production. The growers, therefore, must depend almost wholly on the exportation to Europe, to get rid of the surplus of their wheat; and should the increase with which the markets of Europe are threatened take place, it will very soon destroy itself, for to a certainty such an increase would produce, while it lasted, a permanent depression in prices in Europe. This would, in turn, react upon America, and thus the only object of such over-production would be defeated, namely, a living profit; and if this is rendered permanently impossible, production must necessarily cease beyond the extent of supplying a legitimate demand.

A French gentleman, Count Fouchet de Careil, has recently returned from the United States, and brought with him some alarming ideas on this subject. From what he has seen and heard, he thinks that the European markets are threatened with a future inundation of wheat, to the utter ruin of the agriculture of France and England in particular, and low prices in the exporting countries of the continent. He speaks of new settlements in the Far West threaded with railways, which facilitate and expedite the conveyance of agricultural produce to the eastern shipping ports. This is all very true; but it is equally true, in America as in England, that railways are expensive modes of conveying merchandise when they have a monopoly, and no competition. All the efforts of the merchants of Chicago and the other lake ports of the north-west have failed in prevailing on the railway authorities to lower the charges on wheat from thence to New York, which are found to be too heavy, to enable the merchants to ship at that port to advantage. The consequence is that no wheat is forwarded thither by rail, except on an emergency, when the price at New York is so much above that at Chicago, as to make it remunerative.

After all, so far as regards the immediate future, the stocks of wheat at the two depôts—New York and Chicago—are not so overwhelming as to threaten Europe with a surfeit. It appears that on the sixth of March last there was certainly not more than 7,000,000 bushels, or 875,000 quarters of wheat in stock at both places. A large portion of this will be required for home consumption. That portion of it at Chicago destined for the United Kingdom will not reach us before June, at which time our stocks will begin to run short, as they do at the present moment. For it must be taken into account that the crops of wheat of 1869 were very def-

cient, and would require an importation for the season of not less than ten million quarters to meet the consumption. There is a considerable amount of wheat daily expected from San Francisco, which, however, cannot much affect prices in the present state of the trade, although, if the shipments are large, it is probable that, for the moment, it may produce a depression on the market. What may come from New York when the supplies from Chicago have arrived there it is impossible to say; but it is stated by some correspondents that the financial difficulties of many of the holders of wheat, who accepted bills, or borrowed money otherwise, upon the security of their stocks, and are now called upon to refund, will probably compel them to send considerable supplies to Europe.

There is another circumstance, relating to the season, that will have some influence on prices, namely, the lateness of the harvest here, which, in consequence of the ungenial weather of the spring up to the present moment, accompanied, as it is, with a severe drought, cannot be but backward, even if no accident otherwise happens to the crops. This will add probably nearly a month to the requirements of the consumption between harvest and harvest, by which the stocks of both native and foreign wheat will be proportionately reduced. Both, in fact, have already been considerably trenched upon during the first four months of the present year. The deliveries of English wheat were much greater than in the corresponding period of last year; and the stocks of foreign wheat are also largely reduced. In fact, the price of wheat has for some time been

lower in Mark Lane than at most of the country markets, so that the millers have found an advantage in purchasing here, of which they have availed themselves to an unusual extent, and this in spite of the larger delivery of English wheat at the country markets. It appears that at 150 markets (about one-tenth of the kingdom) the return of sales of wheat from the 5th March to the 16th April 1870, exceeded those for the same period in 1869 by 75,500 quarters; so that, if this be a fair estimate of all the markets, by multiplying it by ten, it gives an aggregate excess of delivery for the whole kingdom of 755,000 qrs. over that of 1869 in six weeks.

Returning again to the American side of the question, we would say, that we have no fear that the shipments from that country will persistently exceed our requirements. For the present, perhaps, the embarrassments of the speculators will compel them to force the market at any price, in order to meet their engagements. "But," says one writer from New York, "the serious losses sustained during the last few months have destroyed the spirit of speculation, and this circumstance is unfavorable to an advance in price, and besides, we expect large arrivals (at New York) in the spring, as well as financial difficulties, in consequence of the largeness of the stocks on hand. All this renders the future of the trade very doubtful, and it is impossible to form a safe conclusion." But whatever may be the *present* result, if the American farmers are wise they will take warning from this misadventure, not to extend their production beyond the probable demand. The merchants know how to take care of themselves.

THE CENTRAL CHAMBER OF AGRICULTURE.

TO THE EDITOR.

SIR,—I am surprised to see that there are some few farmers who appear annoyed at the course you have taken in reference to the proceedings of the Central Chamber of Agriculture.

Permit me to say a few words on the one question above all others which that body so persistently advocates, viz., the great injustice, as they allege, of the exemption of personal property from contributing towards the relief of the poor, &c.

I need not, I am sure, remind your readers of the innumerable resolutions that the Central Chamber has passed on this subject; but, at their last meeting, finding the Government does not accede to their demands, they pass a number of protests:

(1). "This Council repeats its protests against the present unjust exemption of personal property from contributing," &c., &c.

(2). "That the order in which the Government have indicated their intention of considering the subject of local taxation is irregular and inexpedient," &c., &c.

The third winds up thus:

"This Council protests against any such measures being accepted," &c.

Now, it is a very sorry thing to be driven to protesting after this fashion; but I am astonished that any tenant-farmer will give his time and money in supporting the Central Chamber on this question.

See what Mr. Andrews himself says in his evidence before the Committee now sitting on the matter. To Mr. Pell: "It (the Rate) has diminished the profits in pro-

portion, and many a man has gone down to ruin quietly through the increased burden of the poor-rate." In answer to the Chairman, Mr. Andrews said that "he should think the rates represented quite one-third of the profits;" and in reply to this further question, "And still you hold that if you paid only £90 instead of £180, you would not be able to get more rent from anyone bidding for the farm?" A. "Certainly I should: I should get £90 a year more; that is very clear."

Notwithstanding, therefore, many a tenant "has gone down to ruin quietly through the increased burden of the poor-rate," by whatever amount his rate is to be reduced, by so much is his rent to be increased. "That is very clear," says Mr. Andrews, the grand mover in this matter at the Council of the Central Chamber of Agriculture. I trust the eyes of the tenants will soon be opened to the way in which they are being befooled by that body.

In conclusion allow me to thank you for the course you have taken, and, at the same time, to record my "protest" against any idea that the Central Chamber of Agriculture may be taken as representing the

TENANT FARMER.

P.S. I am pleased to see that the Government has taken up the inquiry from the point of view which Mr. Dashwood brought forward in his excellent paper on local taxation, read at the Farmers' Club in April, 1869.

[Mr. Dashwood has recently been called as a witness before the Local Taxation Committee.]

THE CONDITION OF THE LABOURER ON THE CONTINENT.

The official reports as to the tenure of land, in foreign countries, to which we have already alluded, furnish some interesting details as to the condition and usages of the agricultural labourers on the Continent, which may be usefully cited for comparison with the condition of our own labourers, and which will go far to prove that there are many advantages here in favour of our own agricultural labourers, as regards food, wages, and dwellings. We pass over some of the less important countries of Europe, considered in an agricultural point of view, confining ourselves to those which may be considered the most prominent and noteworthy.

If we take first the Prussian monarchy, out of a purely agricultural population of about 9,500,000, fully 2,000,000 are agricultural labourers, and their families and dependants more than another 2,000,000. A very considerable portion of these are either owners or tenants of land, who work as day labourers at harvest and other times. The day wages are apparently higher than the wages of the farm and field labourers who are employed by the year; but if allowance be made for the risk of want of work, and for other incidents of the day labourers' earnings, they are not really higher, but, on the contrary, he probably is in a worse position than the regularly engaged farm labourer. This difference is his payment for his independence and family life. It is seldom the custom to pay all the wages in money; very frequently the farm-servants are boarded at the farm-house. In other cases the payment is chiefly made in kind.

The rate of a day labourer's wages is of great economical importance. In Prussia the wages of the farm labourer by the year are, for a man, as a rule, 60s. to 90s. up to, in some manufacturing districts, 105s.; for a girl 36s. to 60s. a-year, and in better neighbourhoods 75s., and even 90s. In the smaller peasant farms the general farm-servant has a smaller wage, but an allowance in clothing and linen. The board of a general farm-servant consists usually of four meals in summer and three in winter; in the morning, milk, flour-porridge or groats, and dried peas and potatoes; at midday vegetables and dumplings, sometimes with meat, and sometimes without; at vesper-time, milk-porridge, or clotted milk, with bread, and a little brandy; in the evening, potatoes with herrings, and porridge, and on fete days roast meat, with white or fancy bread. Half-a-pound or three-quarters of a pound of meat is given at dinner two or three times a week; on the larger farms it is not unusual to substitute for board a payment in kind. Thus for a man, 10½ bushels of rye, the same of barley, 3 of peas, 18 of potatoes, 3½ bushels of corn, one-quarter of an ox as meat, or 21s., half a lean pig, or 15s., and 12s. for herrings, salt, and pot-money. In winter a pint, and in summer a quart, of milk, daily, firing free, and on fete days beer and brandy. The varieties of this plan are numerous.

Free labour is taking the place of contract labourers bound to the farm, and paid in kind for the most part. The labourer now receives a house free, potato-land, pasture for a pig, and medical attendance. The man is bound to work throughout the year at a daily wage of 6d. to 1s., the women in the summer at 5d. to 7d. For piece-work the pay is, mowing 13d. to 21d. the acre, for digging potatoes 0½d. to 1½d. per bushel; dressing with manure 13s. 6d. per acre, with mould 27s. per acre.

In Pomerania the wages vary much, the lowest rates for a man are 54s. to 75s. the year, the highest 120s. to 150s., with board. The instances cited will suffice to indicate the modes and details of paying the agricultural labourer, but a few striking variations may be cited as regards other provinces. In Posen the farm servant receives a computed annual value of £10 10s. to £13 10s. Meat is seldom allowed. The married farm man receives £18 to £20 a year. In Silesia the man receives a computed annual value at the lower rates of £9 to £10 up to £15 the highest, half a pound of meat is allowed twice a week. In Westphalia the wage is high, and the board very good. Meat is generally allowed every day, and on many farms beer is given. Coffee is allowed on morning and afternoon. Men's wages are from £3 to £7 10s. a year, and women's £3 to £4 10s. On the smaller peasant properties the wage is rather less, but the man gets a pair of boots and three shirts, and the woman a pair of shoes and linen for two or three chemises. As it is the local custom to wash linen only two or three times a year, each person requires a good stock. Hence also this is a reason for payment in kind taking the form of shirts.

In all parts the agricultural labourer appears to be contented. Often two or three families live in the same small dwelling—sometimes with only one small room for sleeping, living, and cooking in. The labourers are seldom thrifty. They live from hand to mouth. The humble prosperity of the family depends upon the kind of wife, other things being equal. If she be not a good manager, the wolf is always at the door.

In the Duchy of Saxe-Coburg Gotha, the day labourer, who lives in the house and is fed, receives £5 5s. to £7 10s. a year; a woman £2 14s. to £3 15s. Some day labourers also live with and are fed by the landowners, in which case a man receives 6d. a day, a female 3d. to 4d. If not fed, 11d. to 1s. 2d., and females 7d. to 9d. Generally speaking, a day labourer with a family is far from well off, if he does not possess a house and sufficient garden, or hired ground to enable him to grow potatoes enough for his family, and for feeding a pig. Notwithstanding the pitiful state of such people, it is seldom that they blame or reproach their employers; their only wish is to give up agricultural life, and find work in some other branch of industry.

The labourer in Denmark receives from 7s. 6d. to 9s. a week, the hours of labour being twelve or thirteen in the summer, and while daylight lasts in winter. When the employer provides the food, the wages may run from 2s. 6d. to 5s. a week. He is not much worse fed than the Somersetshire labourer, although wheaten bread and bacon must in themselves be more nutritious than rye-bread and cold salt pork. The Danish master is far worse clothed than the English peasant, and above all far worse housed. The charges for the relief of the agricultural poor are on the increase in Denmark, being about 2s. per head for the country population.

In Belgium the day labourer earns about 1s. per day, and pays about 10d. a week rent for a cottage. In some parts of the kingdom the wages of the agricultural labourer reaches 1s. 8d. a day, without food. When fed by his employer, he is content with rye-bread, potatoes, and curds, with occasionally a bit of bacon or salt meat. At his own cottage his food is still worse.

In France the farm-servant mostly lives under the same roof and eats with the master, and in fact forms part

of his family. They are, however, comparatively few in number. Their wages now average from £10 to £12 a year for men, and from £5 to £7 for women, lodged and fed at a cost of about £10 a year per head. The hired day labourers receive from 1s. to 2s. per day, and women from 6d. to 1s. They are fed at a cost of about 8d. per head per day. Female labour is much employed, more especially in the northern departments, and this would seem to be a natural consequence of small holdings. On an average the wages of the female labourer are one-half those of the male. The emigration of the country population to the great towns is daily increasing, and has advanced the price of day labour. It may be said that the wages of the day labourer have increased one-third within the last thirty years, and he can earn on an average 2s. 6d. to 3s. a day.

We conclude with a few words on the condition of the agricultural labourer in Portugal. Here, the vigour and

growth of the rural population are stated to be stunted by the large quantities of vegetable food (especially pulse) which they are compelled to consume, in order to obtain the quantum of nitrogenous substances essential to life. Pot-herbs, a little rice, chestnuts, and scanty rations of fish constitute, with the vegetables, the maintenance and sustenance of the rural classes. Meat is never eaten, except perhaps on a few holidays of the year. The people live and labour—or it may be more correctly said that in many parts of the country they only vegetate—and are too weak and too little energetic for the physical efforts demanded of them. The average wages of hired labourers throughout the country may be stated at 1s. 3d. a day for men, and 5d. for women.

The data we have cited from this Parliamentary Report will serve to convey a fair average idea of the condition of the agricultural labourer in the chief countries of Europe, as compared with England and Wales.

THE TRANSIT OF STOCK.

At a meeting of the Council of the Central Chamber of Agriculture, in the autumn of last year, a circular letter from the Privy Council office, on the transit of animals, came under consideration. In reply certain points were taken up which Colonel Tomline, M.P., the Chairman, characterized as "very good resolutions," although "in his opinion they would not have the slightest effect upon the Government or upon railway companies." But then this gallant gentleman has clearly not formed any very high estimate of any "effects" that may follow from the proceedings at his Chamber, as only a month or so since in opening the business he declared with all sufficient emphasis that "practically they had done nothing," and "that they had not advanced one step." We confess that we are inclined to give the Central Chamber more credit than is allowed by its own President, if only in this matter of the transit of stock. As we showed at the time the resolutions of the Chamber came in support of, as they were in fact but an echo of the answer agreed to at the Farmers' Club on the previous day. Some original notions of some of the members of Council were very dutifully struck out, as in the end nothing could well be more unanimous than the replies sent in to Mr. Tennant from the two Societies. Now, we are by no means here prepared to maintain that the Chamber of Agriculture was, as its Chairman would have it, working "without the slightest effects." In backing the opinion of the Farmers' Club it is probable enough the demonstration from the Central Chamber really had some weight with the Government, however little inclined a Minister may be to pay any attention to its curious complications over the adjustment of local burdens, its impractical substitutes for the malt tax, or its do-nothing policy as regards the game abuse.

But we differ even further with the Chairman of the Central Chamber. From the first we have maintained that the present Government, liberal though it might be, was not altogether indifferent to the claims of agriculture; as we have repeatedly expressed our conviction that more might be expected of it in certain directions than even from our own County Party. Over such questions as the cattle plague, or the rabbit evil, the farmer looked to be in good hands, although it has been the fashion in some quarters to say otherwise. In dealing, in fact, with the diseases of stock, we felt that Mr. Forster was as much to be trusted as Lord Robert Montagu himself, even if he had not bound him-

self down to any one very particular spot as the site for a foreign market. At the solution of this difficulty we have not yet arrived, although the business is fast ripening; but in the interim something has been done in other ways. Colonel Tomline said, as Chairman of his Chamber, that any representation to the Government on improving the carriage of stock would not have the slightest effect, and it may be interesting to see how far this impression has been confirmed.

As a merely second-hand Society, at least in this business, we may set aside the Central Chamber of Agriculture, and compare the new Orders as they appear in *The Gazette* with the resolutions forwarded from the Farmers' Club to the Privy Council Office in October. The first recommendation from the Club ran thus: "That, all trucks for the conveyance of animals upon railways should be fitted with spring buffers." And the Lords of the Council now order, as the first condition for the better transit of animals by railway that, "From and after the thirty-first day of December, one thousand eight hundred and seventy, every truck used for carrying animals on a railway shall be provided with spring buffers, and the floor thereof shall have proper battens or other foot-holds thereon." The second point taken by the Club was, "That, in order to prevent the injurious effects upon the animals by the shunting of the trains and from other causes, the trucks should be divisible into compartments;" and, "That the vessels should be divided or divisible into compartments in the same way the Committee has recommended for railway trucks." It is right to say that some members of the Committee of the Club were not so clear as to the advantage which would follow from such divisible compartments; and the recommendation is only adopted so far as regards vessels where, in the places used for animals, the following regulations shall have effect: "Every such place shall be divided into pens by substantial divisions.—Each pen shall not exceed nine feet in breadth, or fifteen feet in length.—The floor of each pen shall have proper battens or other foot-holds thereon." The Committee of the Farmers' Club proceeds to advise "That, animals should not be upon a railway for more than twelve hours without water; and that railway companies should be compelled to provide means for the proper watering of cattle before loading."—And "That, any appliances for the watering of animals should be attached either to the carriages, or troughs should be so placed at

the stations, that animals travelling for more than twelve consecutive hours can drink from such troughs without being removed from the trucks." And the Lords of Her Majesty's most honourable Privy Council "do hereby direct that the Railway Companies working the railways named in the Schedule to this Order shall, at each of their respective stations named in that Schedule, provide water for animals carried or about to be or having been carried on the railway of the Company." The list of these watering stations, which we give in another part of our Paper, runs already to over three hundred. With respect to the feeding of cattle travelling by railway, the Committee of the Club was "of opinion that there are great difficulties in the adoption of any plan, and is not sure that the feeding is necessary or desirable;" and no mention or Order is given for providing food for beasts moving inland. The Club report says, "That, all vessels for the conveyance of cattle should be licensed for the purpose; and that the number of animals such vessels should be laden with be defined on the same principle as is adopted with emigrant ships;" and the new Orders that, "From and after the thirty-first day of October, one thousand eight hundred and seventy, animals landed from a vessel shall, on a certificate of an Inspector appointed by the Privy Council in that behalf certifying," &c. Finally, the Club states "That pleuro-pneumonia and other diseases are no doubt engendered by the exposure to which animals are subjected on landing, and that sheltered accommodation should be provided on their disembarking;" and the new Orders provide that "At every place where animals are landed from vessels, provision shall be made, to the satisfaction of the Privy Council, for the speedy and convenient unshipment of animals, and for a supply of food for them." It will be thus seen that there is not a single recommendation emanating from the Farmers' Club but that has had its weight with the Council, while some further provision is made for the cleansing and disinfecting of vessels, pens, and vehicles. If the new Orders show any want or weakness, it is that the overcrowding, as the Club puts it, is not sufficiently defined, as this would seem to be a matter left almost altogether to the judgment and discretion of the Inspector.

"The action of the Irish Government has probably saved those who are engaged in exporting cattle from Ireland from the possibility of being placed in a very disagreeable dilemma; and it is to be hoped therefore that all concerned will unite in assisting the Government to carry out the provisions of the recent order in the most effectual manner. It is in this way we shall give our customers on the other side of the Channel the best guarantee of our earnestness, and there is no doubt but that in a very short time the beneficial results of such a course will be sufficiently evident." So says the *Irish Farmers' Gazette* of only Saturday last, when referring to the orders recently issued for the suppression of pleuro-pneumonia in the Sister Kingdom. We would thus seem to be making some progress in every way; and yet to what continual misrepresentation, if not something worse, has the present Government been subjected! The Chairman of the Central Chamber of Agriculture, although sitting on the same side of the House, has no confidence in the Ministry as regards the claims of Agriculture; while the Home Cattle Defence Association is always indignantly protesting about something which the Government has, or has not done. But a foreign cattle market may follow, and then even that curiously-constituted body should be satisfied. There are, however, some Societies that have been inclined to give the Government credit for better intentions. On introducing a deputation from the Farmers' Club, in the spring of last year, Mr. James Howard, M.P., said,

addressing the Vice-President of the Council, "The deputation, sir, does not come before you with any hostile feelings towards the measure which you have introduced in Parliament; on the contrary, they see in it much that is wise and good. I feel, and I believe the members of the Club generally feel, that the Government has acted wisely in bringing in a measure of consolidation. We also think you have acted wisely in introducing clauses dealing with other diseases besides rinderpest, whether they be of home growth or of foreign production." Whereas the month-pieces of the Chamber of Agriculture have put it all the other way. They would have led the country to believe that Mr. Lowe was going to repeal the malt tax, and that the Government would pay no heed to any suggestions on the carriage of stock. Surely such cross-readings as these are calculated to do a deal more harm than good.

[From the *London Gazette*, Friday, May 13.]

At the Council Chamber, Whitehall, the 12th day of May, 1870, present, Lord President, Mr. Secretary Bruce, Mr. Forster,

The Lords and others of Her Majesty's most honourable Privy Council, by virtue and in exercise of the powers in them vested under the Contagious Diseases (Animals) Act, 1869, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows:—

Preliminary.—1. This order may be cited as the Transit of Animals Order of May, 1870. 2. This order extends to Great Britain only. 3. In this order words have the same meaning as in the Contagious Diseases (Animals) Act, 1869, save that the term "animal" extends to all ruminating animals and to horses. 4. Article 21 of the Contagious Diseases (Animals) Order of August, 1869, is hereby revoked.

Transit of Animals by Sea.—5. With respect to places used for animals on board vessels, the following regulations shall have effect from and after the thirty-first day of July, one thousand eight hundred and seventy:—(1.) Every such place shall be divided into pens by substantial divisions. (2.) Each pen shall not exceed nine feet in breadth, or fifteen feet in length. (3.) The floor of each pen shall have proper battens or other foot-holds thereon. (4.) Every such place, if inclosed, shall be ventilated by means of separate inlet and outlet openings, of such size and position as will secure a proper supply of air to the place in all states of weather. 6. Between each first day of November and the next following thirtieth day of April (both days inclusive), freshly shorn sheep shall not be carried on the deck of a vessel. 7. When sheep are carried on the deck of a vessel, proper gangways shall be provided either between or above the pens in which the sheep are carried. 8. From and after the thirty-first day of October, one thousand eight hundred and seventy, animals landed from a vessel shall, on a certificate of an inspector appointed by the Privy Council in that behalf, certifying to the effect that the foregoing regulations, or some or one of them, have not or has not been observed in the vessel, be detained, under the supervision of the Commissioners of Her Majesty's Customs, at the landing-place, or in lairs adjacent thereto, until the Privy Council otherwise direct.

Cleaning and Disinfecting of Vessels.—9. Every vessel used for carrying animals shall, after the close of each voyage, and before any fresh cargo is taken on board, be cleaned and disinfected in manner following: (1.) By the sweeping out of the hold and every other part of the vessel used for animals, and the effectual removal therefrom of all dung and litter, and of all ashes, sand, sawdust, and other matter with which animals or their droppings have come in contact: (2.) Then by the thorough washing of the same parts of the vessel with water: (3.) Then by the application to the sides, floor, and ceiling of the hold and to every other part of the vessel with which animals or their droppings have come in contact, of a coating of limewash made by mixing good freshly-burnt lime with water, and containing in each gallon of limewash either one-fifth of a pint of commercial carbolic acid, or one-fifth of a pint of commercial cresylic acid, or four ounces of fresh dry chloride of lime, such lime-

wash to be prepared immediately before use. The sweepings of the vessel shall be well mixed with quicklime, and effectually removed from contact with animals.

Shipping and Unshipping Places.—10. At every place where animals are put on board of or landed from vessels, provision shall be made, to the satisfaction of the Privy Council, for a supply of water for animals; and water shall be supplied there gratuitously, on request of any person in charge of any animals. 11. At every place where animals are landed from vessels, provision shall be made, to the satisfaction of the Privy Council, for the speedy and convenient unshipping of animals, and for a supply of food for them; and food shall be supplied there, on request of any person in charge of any animals, at such price as the Privy Council, from time to time, approve.

Transit of Animals by Railway.—12. From and after the thirty-first day of December, one thousand eight hundred and seventy, every truck used for carrying animals on a railway shall be provided with spring buffers, and the floor thereof shall have proper battens or other foot-holds thereon. 13. From and after the thirtieth day of June, one thousand eight hundred and seventy, a railway company shall not allow any truck used for carrying animals on their railway to be overcrowded so as to cause unnecessary suffering to the animals therein. 14. Between each first day of November and the next following thirtieth day of April (both days inclusive), trucks used for carrying on a railway sheep freshly shorn and unclothed shall be covered and inclosed so as to protect the sheep from the weather, but shall be properly ventilated.

Cleaning and Disinfecting of Pens and Vehicles.—15. Every pen, carriage, truck, horse-box, or vehicle used for carrying animals on land shall, on every occasion after any animal is taken out of the same, and before any other animal is placed therein, be cleaned and disinfected in manner following: (1.) By the sweeping out of the pen, carriage, truck, horse-box, or vehicle, and the effectual removal therefrom of all dung, sawdust, litter, and other matter: (2.) Then by the thorough washing of the pen, carriage, truck, horse-box, or vehicle with water: (3.) Then in case of a pen, carriage, or truck, by the application to the floor and to all parts above the floor with which animals or their droppings have come in contact, of a coating of limewash made by mixing good freshly burnt lime with water, and containing in each gallon of limewash either one-fifth of a pint of commercial carbolic acid, or one-fifth of a pint of commercial creosylic acid, or four ounces of fresh dry chloride of lime, such limewash to be prepared immediately before use. The sweepings of the pen, carriage, truck, horse-box, or vehicle shall be well mixed with quicklime and effectually removed from contact with animals.

Penalties.—16. If anything is done or omitted to be done in contravention of any of the regulations of this Order, the owner and the master or person having charge or command of the vessel in which, — and the owner and the occupier of the place where animals are put on board of or landed from vessels at which, — and the company carrying animals on or owning or working a railway on which, — and also in case of the overcrowding of a truck on a railway, or of the carrying on a railway of sheep freshly shorn and unclothed, the consignor of the animals in respect of which, — (as the case may be,) such thing is done or omitted, shall severally be deemed guilty of an offence against this Order. 17. Provided, that no person shall be liable to a penalty under this Order in respect of sheep as freshly shorn, where it is proved that the sheep have not been shorn within sixty days before the time of the commission of the alleged offence.

ARTHUR HELPS.

At the Council Chamber, Whitehall, the 19th day of May, 1870; by the Lords of Her Majesty's Most Honourable Privy Council. The Lords and others of Her Majesty's most Honourable Privy Council, by virtue and in exercise of the powers in them vested under the Contagious Diseases (Animals) Act, 1869, and of every other power enabling them in this behalf, do hereby direct that the railway companies working the railways named in the Schedule to this order shall, at each of their respective stations named in that Schedule, provide water for animals carried or about to be or having been carried on the railway of the company.

This Order may be cited as the Transit of Animal (Water) Order of May, 1870.

ARTHUR HELPS.

SCHEDULE.

Name of Station.	Name of Railway.
Aberdeen	Caledonian
Accrington	Lancashire and Yorkshire
Alford	Great Northern
Almond Bank	Caledonian
Alyth	Caledonian
Amphill	Midland
Annan	Glasgow and South-Western
Arbroath	Caledonian
Ardre	Caledonian
Ardrossan	Glasgow and South-Western
Arundel	London, Brighton, and South Coast
Ashbourne	North Staffordshire
Ashton	Lancashire and Yorkshire
Aspatia	Maryport and Carlisle
Auchterarder	Caledonian
Aylesbury (Junction with London and North-Western Railway)	Aylesbury and Buckingham
Ayr	Glasgow and South-Western
Bacup	Lancashire and Yorkshire
Balfour	Forth and Clyde Junction
Banbury	Great Western
Barnet	Great Northern
Barnsley	Lancashire and Yorkshire
Barrow	Furness
Beattock	Caledonian
Bedford	London and North-Western
Bedford	Midland
Birkenhead (New Station)	Great Western
Birkenhead (Joint Station)	London and North-Western
Birmingham	Great Western
Birmingham	London and North-Western
Birmingham	Midland
Bishop's Cleeve	Great Eastern
Blackburn	Lancashire and Yorkshire
Blackford	Caledonian
Blairgowrie	Caledonian
Bletchley	London and North-Western
Blythe Bridge	North Staffordshire
Bolton	Lancashire and Yorkshire
Bolton	London and North-Western
Boston	Great Northern
Bradford	Lancashire and Yorkshire
Bradford	Midland
Braintree	Great Eastern
Brechin	Caledonian
Bridge of Dun	Caledonian
Bristol	Great Western
Bristol	Midland
Brockholes	Lancashire and Yorkshire
Broughty Ferry	Caledonian
Builth	Mid Wales
Bullgill	Maryport and Carlisle
Burton	Midland
Bury	Lancashire and Yorkshire
Bury St. Edmunds	Great Eastern
Buxton	Midland
Callander	Caledonian
Cambridge	Great Eastern
Cambridge	London and North-Western
Cardiff	Rhymney
Carlisle	Caledonian
Carlisle	London and North-Western
Carlisle	Maryport and Carlisle
Carmarthen	Llanelli Railway and Dock
Carnoustie	Caledonian
Castle Douglas	Glasgow and South-Western
Chatham	Lancashire and Yorkshire
Chelmsford	Great Eastern
Chester (Joint Station)	London and North-Western
Cherterfield	Midland
Chichester	London, Brighton, & S. Coast
Chippingham	Great Western
Cleckton	Lancashire and Yorkshire
Clietheroe	Lancashire and Yorkshire
Colchester	Great Eastern
Congleton	North Staffordshire

Cooper Bridge	Lancashire and Yorkshire	Leicester	Midland
Corwen	Great Western	Leith	Caledonian
Cooper Angus	Caledonian	Lichfield	London and North-Western
Crestown	Caledonian	Lincoln	Great Northern
Crews	London and North-Western	Lincoln	Midland
Crieff	Caledonian	Littlehampton	London, Brighton, & S. Coast
Croston	Lancashire and Yorkshire	Liverpool	Lancashire and Yorkshire
Denny	Caledonian	Liverpool (Canada Dock)	London and North-Western
Derby	Midland	Liverpool (Stanley)	London and North-Western
Dereham	Great Eastern	Liverpool (Waterloo)	London and North-Western
Dewsbury	London and North-Western	Llandilo	Llanelli Railway and Dock
Didcot	Great Western	Lockerbie	Caledonian
Diss	Great Eastern	Long Preston	Midland
Doncaster	Great Northern	Luton	Midland
Doncaster	Midland	Lynn	Great Eastern
Dabton	Caledonian	Lytham	Lancashire and Yorkshire
Dumfries	Caledonian	Macclesfield	North Staffordshire
Dumfries	Glasgow and South-Western	Maiden Lane	London and North-Western
Dunblane	Caledonian	Manchester	London and North-Western
Dundee	Caledonian	Mansfield	Midland
Dunmow	Great Eastern	March	Great Eastern
Dunning	Caledonian	Market Harboro'	Midland
Ecclefechan	Caledonian	Maryport	Maryport and Carlisle
Edinburgh	Caledonian	Maaboro'	Midland
Elstree	Midland	Meigle	Caledonian
Ely	Great Eastern	Melton	Great Eastern
Epping	Great Eastern	Melton	Midland
Errol	Caledonian	Methley Junction	Lancashire and Yorkshire
Evesham	Midland	Methven	Caledonian
Fakenham	Great Eastern	Milford	Great Western
Falkirk Tryst Sidings	Caledonian	Montrose	Caledonian
Fleetwood	Lancashire and Yorkshire	Morecambe	Midland
Forfar	Caledonian	Newark	Midland
Glasgow	Caledonian	Newbridge-on-Wye	Mid Wales
Glasgow	Glasgow and South-Western	Newcastle	North-Eastern
Gloucester	Great Western	Newhaven	London, Brighton, & S. Coast
Gloucester	Midland	New Milford	Great Western
Goole	Lancashire and Yorkshire	Newport (Mon.)	Monmouthshire Rail. & Canal
Grantham	Great Northern	Northampton	London and North-Western
Greenock	Caledonian	Northampton	Midland
Guthrie	Caledonian	Norton Bridge	North Staffordshire
Gwyddelwern	Denbigh, Ruthin, and Corwen	Nottingham	Great Northern
Hadleigh	Great Eastern	Nottingham	Midland
Hailsham	London, Brighton, & S. Coast	Norwich (Trowse)	Great Eastern
Halifax	Lancashire and Yorkshire	Norwich (Victoria)	Great Eastern
Harlington	Midland	Oldham	Lancashire and Yorkshire
Harlow	Great Eastern	Ongar	Great Eastern
Harrow	London and North-Western	Ormskirk	Lancashire and Yorkshire
Harwich	Great Eastern	Oswestry	Great Western
Heckmondwike	Lancashire and Yorkshire	Oxford	London and North-Western
Hendon	Midland	Paddington	Great Western
Hereford	Great Western	Paisley	Glasgow and South-Western
Hereford (Joint Station)	London and North-Western	Penrith	London and North-Western
Hertford	Great Eastern	Perth, North	Caledonian
High Bridge	Somerset and Dorset	Perth, South	Caledonian
Highlandman	Caledonian	Peterboro'	Great Eastern
Hindley	Lancashire and Yorkshire	Peterboro'	Great Northern
Hitchin	Great Northern	Peterboro'	Midland
Hitchin	Midland	Piel	Furness
Hoghton	Lancashire and Yorkshire	Pimbo Lane	Lancashire and Yorkshire
Holloway	Great Northern	Plymouth	S. Devon, Corn., & W. Corn.
Holyhead	London and North-Western	Portpatrick	Caledonian
Horsham	London, Brighton, & S. Coast	Portsmouth (Lancashire)	Lancashire and Yorkshire
Huntingdon	Great Northern	Preston	Lancashire and Yorkshire
Ipswich	Great Eastern	Preston (Mandlands)	London and North-Western
Kendal	London and North-Western	Preston (Oxhey Market)	London and North-Western
Kentish Town	Midland	Radcliffe	Lancashire and Yorkshire
Kettering	Midland	Ramsbottom	Lancashire and Yorkshire
Kitworth	Midland	Rawtenstall	Lancashire and Yorkshire
Kilmarnock	Glasgow and South-Western	Retford	Great Northern
Kinbuck	Caledonian	Rhayader	Mid Wales
Knottingley	Lancashire and Yorkshire	Rhuddlan	London and North-Western
Lancaster	London and North-Western	Rhymney	Rhymney
Larbert	Caledonian	Rochester	North Staffordshire
Laurencekirk	Caledonian	Rochdale	Lancashire and Yorkshire
Leeds	Great Northern	Romford	Great Eastern
Leeds	Lancashire and Yorkshire	Rotherham	Midland
Leeds	London and North-Western	Rugby	London and North-Western
Leeds	Midland	Saffron Walden	Great Eastern
Leek	North Staffordshire	St. Albans	Midland

St. Ives	Great Eastern	Syston	Midland
Salford	Lancashire and Yorkshire	Talgarth	Mid Wales
Sheffield	Midland	Thames Haven	London, Tilbury, & Southend
Shoreham	London, Brighton, & S. Coast	Todmorden	Lancashire and Yorkshire
Shrewsbury	Great Western	Tottenham	Great Eastern
Shrewsbury (Joint Station) ...	London and North-Western	Tredegar	Sirhowy
Sirhowy	Sirhowy	Tullibardine	Caledonian
Skipton	Midland	Tutbury	North Staffordshire
Snaitth	Lancashire and Yorkshire	Uttoxeter	North Staffordshire
Southall	Great Western	Wakefield (Kirkgate Station) ...	Great Northern
Sowerby Bridge	Lancashire and Yorkshire	Wakefield (Westgate)	Midland
Spalding	Great Northern	Warrington	London and North-Western
Stafford	London and North-Western	Watford	London and North-Western
Steyning	London, Brighton, & S. Coast	Wellingboro'	London and North-Western
Stirling	Caledonian	Wellingboro'	Midland
Stoke	North Staffordshire	West Hartlepool	North-Eastern
Stone	North Staffordshire	Whitehaven	Furness
Stonehaven	Caledonian	Wigton	Maryport and Carlisle
Stowmarket	Great Eastern	Wisbeach	Great Eastern
Stranraer	Caledonian	Wolverhampton	Great Western
Stratford	Great Eastern	Wolverton	London and North-Western
Sudbury	Great Eastern	Worcester	Midland
Swansea	Llanely Railway and Dock	York	North-Eastern.

THE STATE OF THE VETERINARY PROFESSION IN THE UNITED KINGDOM.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR.—As the state of the veterinary profession is a subject of general interest to agriculturists, perhaps you will have no objection to insert the enclosed, which forms the Appendix to my pamphlet on Medical Reform, just published for private circulation.

Yours obediently,

EDWARDS CRISP, M.D.

29, Beaufort-street, Chelsea, May 10, 1870.

This question is so intimately connected with everything that concerns the progress of medical science and the good of the profession, as I hope to show hereafter, that I make no apology for introducing it as an Appendix to this essay. We can scarcely be said to have any efficient mode of instruction for our veterinary students in the United Kingdom. Up to a late period those who examined them were members of the medical profession, and at the present time, to use the language of one of the few reformers among the veterinarians, Mr. Fenwick ("Veterinarian," July, 1829): "A joint-stock company where gentlemen send their horses at the cheapest rate, and where human surgeons, ignorant of the anatomy and diseases of horses, are the examiners."

For thirty-seven years, only one member of the veterinary profession was allowed to be on the examining board. The college receives £200 a-year from the Royal Agricultural Society, the members of which society and other subscribers have the liberty of sending diseased animals free of cost.

There is one advantage this college has over our medical corporations, viz., that the representative system is fully adopted; ladies and members of Parliament being allowed to vote by proxy, a kind of constituency not becoming a scientific body. I am unwilling to make an ill-natured remark, but it must be apparent to all that, like many of our medical corporations, this body is very far behind similar institutions on the Continent—that the system of education and instruction is very inefficient. A new charter is now prayed for, one object of which is to prevent those calling themselves veterinary surgeons who are not members of the college. If this charter is granted it will only add another piece to the patchwork, and effect but little scientific good. The members of this college are about 1,000; a very inadequate number for the supply of the United Kingdom, as was fully shown during the late outbreak of cattle plague. In Scotland, the veterinary college, under the Highland Society, is in a more unsatisfactory state; and in Ireland there is no veterinary instruction of any kind. A friend in Dublin tells me "that Mr. Peale was the last veterinary professor in Ireland, 1827."

The Government should at once establish a veterinary college in Dublin upon a liberal basis, with an annual grant of money

to make the institution entirely independent of annual subscribers. The same should be done in England and Scotland; there is no other means of making this body efficient and respectable. A college so instituted might, as in France, Austria, and Germany, go hand-in-hand with our medical and surgical institutions, and thus effect great good.

THE STATE OF THE VETERINARY PROFESSION IN FRANCE.
—I will now place before the reader, by way of contrast, the state of the veterinary profession in France. Here, there are three veterinary colleges, as there are three schools of human medicine—Alfort, founded in 1765; Lyons, 1762; and Toulouse, 1761. During three recent visits to Paris, I have made it my duty to visit the school of Alfort, and to inquire into the course of study and mode of examination of the students of this college. The regulations are the same at Lyons and Toulouse.

All appointments, as at the medical schools, up to the grade of *aggrégé* are competitive (by *concours*). The student is boarded and partly provided for by the Government. At the present time (October, 1867), there are about 260 students at this school, besides those of Lyons and Toulouse. Each student on admission must be between 17 and 25 years of age; he must produce certificates of birth and good conduct. Those only are admitted who can pass a satisfactory examination in the French language, arithmetic, geometry, geography, with a written narrative of some subject treating of geography and history. For his board, the student pays 450 francs yearly; he remains at the school for four years, the only holidays being Sundays and fête days. In addition to his board, he finds his dress (blue clothes, with gilt buttons), and his under-clothing. The diploma is fixed at 100 francs. Besides the ordinary students, 40 military students are maintained by the Government, who must be the sons of persons in the army, and recommended by the Ministers of War. No student leaves the establishment, which is surrounded by extensive grounds, without permission from the director.

At the three veterinary schools, 178 rewards (*démobonnes*) are yearly given to the most deserving students, and the half-yearly reports (*notes semestrielles*) of progress, are the only documents consulted by the minister for the distribution of these rewards.

The course of study is as follows: First year, anatomy, natural philosophy, mechanics, chemistry, botany, and histology; second year, anatomy, physiology, zoology, chemistry, materia medica, botany, histology, and the structure of the different domesticated animals; third, pathology, hygiene, and agriculture; fourth year, breeding of animals, anatomy, physiology, and pathology (theoretical and practical).

Several lectures are given daily by the professors (paid by the Government), who have obtained their appointments by

CONCERN, and who have distinguished themselves by their various writings and discoveries. I need scarcely say that the examiners at the medical and veterinary schools have no pecuniary interest in the examination.

I will not offend the reader by asking him to contrast this state of things in France with that which I have described in the United Kingdom, but I ask him if a veterinary surgeon in France is required to be examined in botany, zoology, and hygiene, why should these important subjects not of necessity form a part of the examination of medical students in England?

It must be observed that these students are educated at the expense of the Government. They pay nothing for attendance upon lectures, as the professors are remunerated by the State, and that when time is taken into account, the period, compared with that of the medical students in England is one year longer; for our medical session is only about nine months. When I passed the London College of Surgeons, it was necessary that a student should be *twenty-two* years of age, and that he should have been engaged for *six years* in the acquirement of professional knowledge; but now the age is twenty-one years, and the period of acquiring professional knowledge limited to *four years*, so much for the progress of science in England in this the 19th century! 2,173 persons in the United Kingdom, in the army, navy, and in the colonies, are practicing with this non-medical diploma only, although more than nineteen-twentieths of the practice of every medical man, civil, military, or naval, is medical.

But let me return from this vital digression to the state of the veterinary profession in the United Kingdom. As I have recently said in Ireland there is not a single teacher of veterinary science; let us suppose cattle plague appears in Ireland (a very likely circumstance), and is undiscovered until the poison is disseminated in various parts of the country, where are the veterinary surgeons to carry out the requirements of the Privy Council? During our late visitation in England, the want of proper inspectors (from the neglect of veterinary science by the Government) was fearfully felt, but what would be the condition of things in Ireland with the horse-leech and the cow-doctor? I have good reason to believe that if Ire-

land had been provided with an efficient class of veterinary practitioners, pleuro-pneumonia would not have made the ravages it has done among cattle in many parts of Ireland, and that the importations of the disease to England would have been less extensive. This is a question that concerns every well-wisher of his country, and the sooner the Irish people begin to stir in the matter the better. It is one of the many grievances of this part of her Majesty's dominions.

I have, however, another motive for introducing this question of the state of the veterinary profession in the United Kingdom in this appendix, viz., the great bearing it has upon the progress of medical science. In France, Belgium, Germany, and Austria, where veterinary surgeons are well instructed, many subjects of great physiological and pathological importance are referred to certain professors of the veterinary profession, who, from their greater knowledge of the structure of our domesticated animals, are better able to decide. Many of these veterinary professors, too, have made important discoveries in anatomy, physiology, and pathology. To give a practical illustration, let me quote an investigation now going on at the Academy of Medicine in Paris. M. Villemin, as shown in his work, "*Etudes sur la Tuberculose, Preuves Rationnelles, Experimentales, de sa Specificité, et de son Inoculabilité, 1867*," has shown that tubercle, or something very much allied to it, may be conveyed from man to the rabbit and to other animals; he believes that "tubercle is a symptomatic and contagious disease." His book is now before the Academy of Medicine, and for the proper investigation of this important matter—one of the most important as regards human mortality that could come before a body of scientific men—the Academy appoints certain persons who are thought to be most competent to investigate the subject and make their report. Among these is the well-known and laborious experimentalist, M. Colin, the Professor of Pathology at Alfort, the school I have just described.

When will a Faculty of Medicine of England, Ireland, or Scotland appoint a veterinary professor to investigate any subject connected with human pathology? When will all our medical students be examined upon subjects that are thought necessary for a horse-doctor in France?

THE INTERNATIONAL DECIMAL ASSOCIATION.

A conference on international measures, weights, and coins, was held at the Society of Arts, Earl Fortescue in the chair.

Professor LEONE LEVI read the twelfth annual report of the Council, in which the following resolutions were reproduced:

1. That it is advisable for international purposes that a single standard for coins should be adopted in all countries, and that that standard should be gold.

2. That, for facilities of exchange, the degree of fineness in the standard should in all countries be nine-tenths.

3. That considering the extensive and growing use of the decimal system, and the time and labour which it saves in computations of money value, and in all commercial transactions, the unit of money value in every country should be decimally subdivided.

4. That, in the opinion of this association, the greatest advantages would result to the country if Great Britain were to join the Monetary Convention, concluded the 28th December, 1865, between France, Italy, Switzerland, and Belgium, by Art. 12 of which convention the right of accession is, under certain conditions, reserved for other States.

5. That, in the opinion of the association, in order to make the sovereign interchangeable for international purposes, it is desirable that the quantity of pure gold contained in it should be reduced to the precise equivalent of the gold piece of 25 francs.

6. That in order to bring the British system and the system of the convention into closer contact, it is desirable that the sovereign so altered should be divided into 250 new pence.

7. That whilst recognising the increased facilities which would result by the establishment of a simple and clear relation between such leading units as the sovereign, the dollar reduced to the level of five francs, and the franc, the Council of the International Decimal Association, anxious to promote one

common universal unit of money, strongly recommend to Her Majesty's government to consider the advantage of adopting the ten-franc piece in gold, consisting of 100 new pence as before defined, as an international unit, and to submit the same for the adoption of the nations parties to the Monetary Convention of December, 1865.

8. That it be recommended to her Majesty's government to take the necessary steps for convening or joining another international monetary conference for the purpose of settling the details of a complete system of international coinage.

The report ran on thus:

Your council are convinced that the establishment of a uniform decimal system of weights and measures based on the metric system, and a system of coinage likewise simple, decimal, and international, would confer a decided boon on all classes of society; that the economy of time and labour which it would introduce would greatly promote the increase of wealth; whilst any system which shortens the processes of elementary instruction must tend to advance the education of the people, and give greater opportunities for the teaching of physical and natural science in the schools of the United Kingdom. For the last ten years we have seen one country after another introducing measures for realising the desired uniformity in these most practical instruments of exchange; and as it is given to Great Britain to exercise a commanding influence, not only by her internal legislation, but by the action of her colonies and dependencies, your council earnestly trust that that influence will be exercised in the direction of promoting the object of this association—one uniform decimal system of measures, weights, and coins in all countries.

Sir CHARLES ADDERLEY, M.P., moved the following resolution:—"That the great inconvenience to agriculture, manufactures, and commerce, as well as to science, resulting from the numerous complicated and anomalous weights and mea-

tures now in use, whether by law or custom, in the British empire, demands the attention of the legislature at the earliest practicable time, with a view to the establishment of some convenient uniform decimal system throughout the United Kingdom."

Capt. CRAIGIE said he attended from the Central Chamber of Agriculture, and he had to apologise for the absence of the chairman and vice-chairman. His principal duty was to state how the Central Chamber of Agriculture had regarded this question, and how they stood in relation to it, rather than to make any remarks of his own. The council of that associa-

tion, in November last, past resolutions to the effect that all agricultural productions should be sold by the decimal system, the cental of 100 lb. being the standard. This resolution had been submitted all over the country to various provincial chambers, from a great many of which replies have been received, stating that they were favourable to such a proposed change; and at the request of the Central Chamber, Colonel Tomline had just presented a petition praying for a select committee to inquire into the subject.

The resolution was seconded by Mr. BAINES, M.P., and adopted.

SALE OF THE LATE MR. G. S. FOLJAMBE'S SHORTHORNS,

AT OSBERTON, WORKSOP, ON APRIL 27TH,

BY MR. JOHN THORNTON.

This event, which had been anticipated for some time past in the North and Midland counties, came off with great success on Wednesday. The high honours that had attended the Osberton Shorthorns at the Royal and Yorkshire meetings for the past few years, drew many visitors to see the herd before the sale took place. On the sale morning, however, the popularity of the late owner, Mr. George S. Foljambe, and the fame of the stock attracted an enormous number of people, from Yorkshire, Lincolnshire, and Nottinghamshire. It was computed at the beginning of the sale that between twelve and fifteen hundred people were present. Before luncheon it was a difficult thing to get near the cows at all, which, being tied up in a cowhouse, allowed only a limited number to move in and out. The yearlings and calves were in small straw-yards, and could be much better seen; several of them received the greatest praise for their fine hair and symmetry and splendid condition. Goody-two-shoes, out of the first cow, undoubtedly one of the best animals sold, and a roan heifer calf, out of Lily of Windsor, with an immense back and well-packed quarters, were first favourites all along. Soon after twelve a large floral tent, in which luncheon for 250 was set out, began to fill. Lord Galway, M.P., took the chair, and Mr. Torr, of Ayleby, acted as vice-chairman. On certain tables the prize cups were displayed, and the medals and portraits of several prize animals were hung on the tent just behind the chairman, who, as soon as the hungry were filled, proposed that the health of his late friend, George Savile Foljambe, should be drunk in solemn silence. The health of Mr. Francis Foljambe, with success to the sale, was afterwards given, the chairman saying that he hoped he would walk in his father's footsteps and keep up an excellent herd of Shorthorns. Mr. Foljambe, in responding, hoped to see a new herd rise up from the remnant which he proposed reserving. Mr. Torr gave Lord Galway's health, who in responding proposed Mr. Woods, the farm bailiff. Mr. Hodgkinson replied, in Mr. Woods' absence; and as soon as the auctioneer's health was given, and responded to, the company adjourned to the ring. The tent was immediately refilled, and everything eatable demolished. Whilst the second party were at lunch, the three Knights were paraded; and, soon after two o'clock, Mr. Thornton in opening the proceedings, spoke to the condition in which the animals were brought out, which was highly creditable to Mr. Woods and the herdsman, John George. Lady's Slipper, rising eleven years old and descended from Mr. Booth's Farewell, paced round the large oval ring, and was a splendid lot to begin with. Of great size, in fine condition, a lovely roan colour, full of fine hair, and beautiful quality, she walked as gaily as a heifer, and was put up at 50 gs. Several bids were made, and ultimately Mr. Brierley, of "Bolivar" fame, and Mr. Robinson, an old breeder, near Leyburn, closed and fought it out from 75 gs. to 100 gs., at which price she was sold to Mr. Robinson. The next lot, newly calved, did not look so blooming; nor did the third, a white one, elicit many bids. Gipsy Queen, the first prize yearling at Newcastle Royal was more in demand; although in fine trim her slack back and bad horns were against her as a show cow, though she had bred some capital

heifers, and she went cheap to Mr. Chaloner, Ireland, at 62 gs. Lily of Windsor and Rose of Windsor, own sisters and both remarkably fine cows, were only newly served and sold accordingly; whilst May Fly, dam of the reserved bull, Knight of the Bath, was a doubtful breeder. Mrs. Page, however, was one of the most level and stylish-looking cows, and was admired as much as any lot offered. Although newly calved she was soon up at 80 gs., and then Capt. Fryer, Lord Bolton's agent, and Mr. Oliver opposed up to 165 gs., at which, amidst much cheering, she was sold to Mr. Oliver. Queen Oak, a roan, was a very inferior looking animal, and Flageolet, a better and larger cow. Glee, with two crosses of Booth bulls, not three years old, had been served at a very early age, and produced a heifer calf before she was two years old: this had not detracted from her appearance, though many thought her a little small. A young Cumbrian, Captain Fryer, went at 5 guinea bids in a very short time to a hundred; and directly the glass went up the opposition ceased, and she goes to Bolton Hall. The prize heifer Flora did not come out so handsome as she had done in the Show-yard, and Lord Bolton got her cheap enough at 74 gs. Queen Bee had died a fortnight before the sale from a hair ball, and the young heifers next came on. As in most sales these went very high, and there was great competition for them. Mr. Murray, Lord Fitzwilliam's agent, and Mr. Locke, of Hall, bid for Castanet at single guinea bids from 40 to 90 gs., when Mr. Locke got in, amidst roars of laughter, but no persuasion would induce Mr. Murray to give 100 gs., and she was sold at 79 gs. Mistress Ford was a very thick longheifer, small of her age, and tremendously fat; she was bought by Mr. Gibson for Messrs. Walcot and Campbell, New York, U.S.A. The next lot, quite the gem of the young things—a beautiful deep red, with a good skin, fine head, and a thorough-bred look—was eagerly sought, and eventually secured for Mr. Cochrane, Canada. The calves were let loose and galloped round the ring, selling remarkably high. Red Ribbon, the only calf by Knight of the Bath, was quite fit to enter a showyard, and although only six months old, made almost double the cost of her dam, only just over six years. As soon as the cows and heifers were sold, the prize cups went round filled with claret, and there was a little delay in this and also in getting in Robin, who had to be blinded. Although a good bull, and not in very high condition, he only made a few guineas over market price; and the White Knight of the Thistle, a very tall bull, went lower. Knight of the Whisk, third at Wetherby and Manchester, was fancied the most, but the competition was very languid, and he was at last bought by Mr. Cruickshank for his huge herd at Settyton. Knight of the Crescent, the second prize calf at Leicester, and cup bull at the Yorkshire show in 1888, went very badly on his forelegs and was immensely fat; although warranted serviceable he made but 61 gs. Bardolph, a five months good-coated calf out of the reserved cow Mrs. Quickly, was full of promise, and many wanted him—he made 81 gs.; and the last calf, a very good deep roan, sold for a guinea over half that price.

The site of the sale could not have been better; situated on Scofton Green, and what with the yard and buildings on one side, the neat cottages and trim hedges on the other, the large gay-looking tent in front, and the neat stacks in the rear,

it formed quite a picturesque scene, and a local photographer endeavoured to turn it to a profitable account. The average for bulls and cows were—unusually enough—within a few shillings of each other; and considering that 13 out of the 35 head were calves under a year old, the £66 average may well be considered a very excellent result.

COWS AND HEIFERS.

Lady's Slipper, roan, calved June 3, 1869, by May Duke (18553), out of Canerentola by Foig-a-Ballagh (8032)—H. Robinson, Leyburn, Yorkshire, 100 gs.

Concertina, red and white, calved April 26, 1861, by May Duke (16553), out of Seraphine by Monarch (13347)—E. Paddison, Ingleby, Lincoln, 43 gs.

Florence, white, calved Sept. 9, 1863, by Imperial Windsor (18086), out of Mrs. Fry by Man Friday (14993)—P. Browne, Gteworth, Lincoln, 51 gs.

Gipsy Queen, roan, calved Oct. 17, 1863, by Imperial Windsor (18086), out of Sybil by May Duke (16553)—R. Chaloner, King's Fort, Ireland, 62 gs.

Lily of Windsor, white, calved Dec. 1, 1863, by Imperial Windsor (18086), out of Blanche by Monarch (13347)—J. Grestham, Stainfield, Lincoln, 44 gs.

May Fly, red, calved Aug. 24, 1864, by Imperial Windsor (18086), out of May Duchess by May Duke (16553)—C. W. Brierley, Rochdale, 36 gs.

Rose of Windsor, roan, calved Oct. 31, 1864, by Imperial Windsor (18086), out of Blanche by Monarch (13347)—J. R. Kirkham, Andleby, Lincolnshire, 70 gs.

Mrs. Page, red, calved Aug. 9, 1865, by Archduke (19239), out of Miss Nightingale by May Duke (16553)—R. E. Oliver, Sholebrooke, Northamptonshire, 165 gs.

Queen Oak, roan, calved Feb. 19, 1866, by Archduke (19239), out of Queen of the Forest by Imperial Windsor (18086)—J. Beard, Worksop, Nottinghamshire, 45 gs.

Flageolet, roan, calved Feb. 28, 1866, by Archduke (19239), out of Clarinet by May Duke (16553)—Capt. Webb, Staffordshire, 60 gs.

Prima Donna, red and white, calved April 6, 1866, by Archduke (19239), out of Concertina by May Duke (16553)—J. R. Kirkham, 40 gs.

Archduchess 2nd, red, calved Aug. 10, 1866, by Archduke (19239), out of Gipsy Queen by Imperial Windsor (18086)—W. Knapton, Beverley, Yorkshire, 90 gs.

Glee, red and white, calved Oct. 29, 1867, by Knight of the Garter (22062), out of Serenade by Imperial Windsor (18086)—Lord Bolton, Bolton Hall, Yorkshire, 100 gs.

Flora, roan, calved Nov. 12, 1867, by Falstaff (21720), out of Florence by Imperial Windsor (18086)—Lord Bolton, 74 gs.

Queen of the Fairies, roan, calved July 10, 1868, by Robin (24968), out of Queen of the Forest by Imperial Windsor (18086)—J. White, Australia, 92 gs.

Florentine, roan, calved Sept. 21, 1868, by Lord Lyons (26677), out of Florence by Imperial Windsor (18086)—Col. St. Leger, Park Hill, Yorkshire, 38 gs.

Castanet, red, calved Dec. 17, 1868, by Lord Lyons (26677), out of Clarinet by May Duke (16553)—T. B. Locke, Heale, Yorkshire, 99 gs.

Mistress Ford, roan, calved Dec. 15, 1868, by Lord Lyons (26677), out of Mrs. Quickly by Prince of Windsor (22638)—R. Gibson, for Wallcott and Campbell, New York, America, 75 gs.

Goody Two Shoes, red, calved May 29, 1869, by Lord Lyons (26677), out of Lady's Slipper by May Duke (16553)—M. H. Cochrane, Canada, 110 gs.

May Queen, red, calved July 4, 1869, by Lord Lyons (26677), out of May Duchess by May Duke (16553)—Earl Fitzwilliam, Coolattin Park, Ireland, 36 gs.

Graffan, red, calved July 29, 1869, by Lord Lyons (26677), out of Archduchess 2nd by Archduke (19239)—Earl Fitzwilliam, 52 gs.

Madrigal, red, calved Aug. 30, 1869, by Lord Lyons (26677), out of Glee by Knight of the Garter (22062)—J. V. Machin, Gateford, 35 gs.

Oboe, red, calved Sept. 30, 1869, by Knight of the Crescent (26547), out of Flageolet by Archduke (19239)—Hon. H. Littleton, Australia, 40 gs.

Firenze, roan, calved Oct. 20, 1869, by Knight of the Crescent (26547), out of Florence by Imperial Windsor (18086)—R. Sneyd, Keele Hall, Staffordshire, 28 gs.

Red Ribbon, roan, calved Oct. 29, 1869, by Knight of the Bath (26548), out of Lily of Windsor by Imperial Windsor (18086)—Rev. P. Graham, Lancashire, 72 gs.

Spring Flower, red, calved Jan. 22, 1870, by Knight of the Crescent (26547), out of Flora by Falstaff (21720)—H. F. Smith, Hull, 21 gs.

Ann Page, red, calved Feb. 14, 1870, by Knight of the Whistle (26558), out of Mrs. Page by Archduke (19239)—G. Hargrave, Lincolnshire, 42 gs.

Harmonium, red and white, calved Feb. 26, 1870, by Knight of the Whistle (26558), out of Concertina by May Duke (16553)—H. F. Smith, Hull, 38 gs.

BULLS.

Robin (24968), roan, calved Sept. 24, 1864, by Imperial Windsor (18086), out of Miss Nightingale by May Duke (16553)—T. Stafford, Nottinghamshire, 48 gs.

Knight of the Thistle (26555), white, calved April 14, 1867, by Knight of the Garter (22062), out of Queen of the May by May Duke (16553)—W. Askew, Nottinghamshire, 43 gs.

Knight of the Whistle (26558), roan, calved Aug. 8, 1867, by Knight of the Garter (22062), out of Blanche by Monarch (13347)—A. Cruickshank, Aberdeen, 100 gs.

Knight of the Crescent (26547), red, calved Aug. 12, 1867, by Knight of the Garter (22062), out of Miss Nightingale by May Duke (16553)—Earl Brownlow, 61 gs.

Chorister (26775), roan, calved April 29, 1868, by Robin (24968), out of Concertina by May Duke (16553)—Heanley, Lincolnshire, 70 gs.

Bardolph, roan, calved Nov. 30, 1869, by Knight of the Crescent (26547), out of Mrs. Quickly by Prince of Windsor (22638)—Rev. P. Graham, Lancashire, 81 gs.

Herr Joel, roan, calved Dec. 19, 1869, by Knight of the Whistle (26558), out of Prima Donna by Archduke (19239)—Colonel Ayres, Nottinghamshire, 42 gs.

SUMMARY.

	£	s.	d.
28 Cows averaged £65 18s. 6d.	1,845	18	0
7 Bulls " £66 15s. 0d.	467	5	0

Total.....£2,313 3s. 0d.

35 head averaged.....£66 1s. 9d

SALE OF MR. CHARLES HOWARD'S SHORTHORN HERD,

AT BIDDENHAM, BEDFORD, MAY 3RD.

BY MR. HENRY STRAFFORD.

The Shorthorn sales of the season had, so far, gone off with such comparative tameness, that a dull trade, in commercial phrase, threatened "to rule." Neither averages nor attendances have been up to high water mark; and, at the first flush, it did not look as if the dispersion of the Biddenham herd would go to mend matters in this way. The very day, that of the race for the great 2,000 gs. Stakes in a neighbouring county, was thought to be injudiciously selected; while, beyond entries at his own local meeting, Mr. Charles Howard

has not attempted much of late by any advertisement of show stock. Nevertheless, as himself a good judge of a Shorthorn, Mr. Howard was known to have been cultivating very carefully some of the best strains of blood, and the Gwynnes, the Spencers, and the Sweethearts, stood out conspicuously in his catalogue. Moreover, any inspection of it conveyed the assurance that never had a herd been offered for sale in better condition, and we say so much in the first sense of the phrase. There was not a pampered beast amongst them; but, the

several lots were sent into the ring, wholesome and useful to the eye, and really fit for breeding purposes. Some of the old cows, like the sweet stylish Fatima Gwynne, had worn wonderfully well, and if some of the figures sounded high for such dowagers, they came out so fresh that the biddings looked to be thoroughly justified. Every now and then an announcement would be made as to how much milk this or that one was giving; and they had all promise of dairy cows, what with their kindly heads, light necks, good bags, and store order. Here then was an opportunity not always available—the foundation was very orthodox, the crossing with more modern tribes quite in fashion, and the quality about as good as it could be; while associated with such recommendations there was the most satisfactory warranty, as offered by the animals themselves, that the purchase of a lot would be not so much of a speculation as a certainty of fulfilling the object for which it was intended. Some knowledge of all this must have got about, as there was as good a company assembled together at Biddenham, on Tuesday, as has been met with for many a long day. In saying so much we would not infer the largest, but rather the most business-like. A glance round the ring, on the occasional announcement of “the buyer,” served to show how strongly the Shorthorn fancy was represented. Mr. Booth, of Warlaby, returned thanks at the luncheon for the breeders; Lord Dunmore bid in person, and exchanged civilities with the auctioneer; Captain Oliver drew his hunting-cart alongside, with a spare seat for Colonel Kingscote, while Mr. McIntosh steadily watched the proceedings from an adjoining waggon. Mr. Clayden, too, would seem to be fast replacing his herd at Littlebury; and Mr. Lynn, of Stroxtan, ever on the look out for something substantial, was thought to have “the bargain” of the day in Gipsy Gwynne, a heavily fleshed heifer. Then Mr. Foster, of Kilhow, was prompt enough with his biddings from the box, and Mr. Gibson, from the United States, of course gave the top price, as our American cousins will do. This was 250 gs. for Orange Gwynne, a three-year-old heifer, neat enough in her character, but that scarcely looked her worth, and the pedigree, no doubt, went far to sell her. Lord Skelmerdale from the north, and Lord Longford, from Ireland, were also entered as purchasers, and at every other turn you encountered such well known men as Mr. Ladda, of Ellington, Mr. Gamble, or Mr. Aylmer from the east, or Mr. J. K. Fowler, who took a spicy keepsake back with him into the Vale. Mr. Bowley looked to be acting as vice-chairman in the tent; Mr. Pawlett and Mr. Wythes were handy home for anything they fancied; and the Masters of the Oakley and the Cambridgeshire, with a member for the county and a brother member for the borough, gave their countenance to the proceedings. The Thomas, the Taylors, the Higgins, and almost all the best men “hereabouts” mustered in force; and Mr. Thornton, with a critical eye on his old tutor, saw the glass run out, so far, to the best average of the year. This, however, was mainly due to the great merits of the cows and heifers, as the bulls were but a plain lot of animals, and the prices were, with an exception or so, in no ways remarkable; but of the two which reached to over a hundred the bull-calf Famous Gwynne is outward bound as far as Australia.

Deservedly successful as the sale went this was not altogether without hitch or hindrance. There were, as there will be, two or three disputes, and of these Mr. Strafford, with some want of tact, made the most rather than the least. He entered into arguments or made speeches, when it would have been far better to have put the lot up again, or have ordered it out of the ring. When a sale is going well there is nothing like keeping it going. “I am come here,” said Mr. Pain, from Messrs. Tattersalls, the other day, when opening business in the Midlands, “not to make long speeches, but to sell some hounds and horses. What will anybody give for lot 1?” From the gossip going on by the ring-side, we gathered that Mr. Booth has just sold his famous cow Patricia for a thousand guineas, the buyer being Mr. Gibson, and her destination the States. It will be remembered that, as two-year-olds at the Leicester Royal Meeting, and further on, there was continual difference of opinion amongst the judges and others as to whether Patricia or Lady Gaiety, both from Warlaby, were the better; but their rivalry has now ended, for the Lady is dead, and Patricia about to become a banished maid. Then the bull-calf which Lord Dunmore recently purchased from the Duke of Devonshire for five hundred guineas was not, it

now appears, really taken at a day or a week old, but on the condition that he is to be delivered in six months’ time—of course, a very material modification of the terms.

COWS AND HELFERS.

Orphan Gwynne, red and white, calved May 2, 1855, by Duke of Gloucester (11382), out of Daphne Gwynne by Conservative (3472).—Mr. Slye, 45 gs.
Grace Howard, red and white, calved April 1, 1859, by Mar-maduke (14897), out of Graceland by Loyalist (10470).—Mr. Holland, 31 gs.
Golden Gwynne, roan, calved November 1, 1860, by May Duke (13320), out of Sylvia Gwynne by Duke of Cambridge (13747).—Withdrawn by leave.
Faustina Gwynne, roan, calved December 16, 1860, by May Duke (13320), out of Flora Gwynne by Young Benedict (15641).—Mr. Dormer, 95 gs.
Fatima Gwynne, white, calved July 20, 1862, by Second Duke of Thorndale (17748), out of Frances Gwynne by Captain Hardings (10093).—Mr. Foster (Kilhow), 86 gs.
Lady Sophia Spencer, roan, calved February 15, 1863, by Second Duke of Thorndale (17748), out of Lady Selma Spencer by Harry of Gloucester (14674).—Mr. Barnard, 52 gs.
Fanny Gwynne, roan, calved January 12, 1864, by Fifth Grand Duke (19875), out of Faustina Gwynne by May Duke (13320).—Mr. Hetherington, 100 gs.
Goody Gwynne, roan, calved June 6, 1864, by Fifth Grand Duke (19875), out of Golden Gwynne, by May Duke (13320).—Mr. Dormer, 65 gs.
The Sort, roan, calved March 10, 1864, by Fifth Grand Duke (19875), out of Specimen by Mameluke (13239).—Captain Oliver, 50 gs.
Day Lily, roan, calved December 18, 1863, by Second Duke of Thorndale (17748), out of Day’s Eye by Young Fourth Duke (9037).—Mr. Fenton, 33 gs.
Lady Susan Spencer, roan, calved October 16, 1864, by Second Duke of Airdrie (18600), out of Lady Selma Spencer by Second Duke of Cambridge (19743).—Mr. Dormer, 61 gs.
Fawley Fourth, red and a little white, calved March 4, 1865, by Fourth Grand Duke (19874), out of Archduchess of Cambridge by Archduke 2nd (15589).—Lord Dunmore, 160 gs.
Fairy Gwynne, roan, calved September 3, 1865, by Fifth Grand Duke (19875), out of Fortuna Gwynne by Duke of Leinster (17794).—Mr. Sharpley, 57 gs.
Syrup, red, calved November 4, 1865, by Fifth Grand Duke (19875), out of Sylph by Londonderry (13169).—Mr. Adkins, 51 gs.
Oleander Gwynne, red and white, calved May 10, 1866, by Fifth Grand Duke (19875), out of Ophelia Gwynne by May Duke (13320).—Mr. Foster, 100 gs.
Floxy Gwynne, roan, calved July 4, 1866, by Twelfth Duke of Oxford (19633), out of Fanny Gwynne by Fifth Grand Duke (19875).—Mr. Blundell, 71 gs.
Fancy Gwynne, roan, calved March 13, 1867, by Fifth Grand Duke (19875), out of Fatima Gwynne by Second Duke of Thorndale (17748).—Mr. Sharpley, 54 gs.
Fawley 7th, red and a little white, calved December 8, 1866, by Fourth Grand Duke (19874), out of Coquelicot by Duke of Cambridge (18742).—Not offered.
Orange Gwynne, roan, calved May 9, 1867, by Fifth Grand Duke (19875), out of Ophelia Gwynne by May Duke (13320).—Mr. Gibson (United States), 250 gs.
Fawley McIntosh, red, calved July 20, 1867, by Baron Oxford (24375), out of Fawley 4th by Fourth Grand Duke (19874).—Lord Dunmore, 185 gs.
Fanna Gwynne, roan, calved July 25, 1867, by Fifth Grand Duke (19875), out of Faustina Gwynne by May Duke (13320).—Mr. Hardy, M.P., 61 gs.
Fleda Gwynne, red, calved August 3, 1867, by Lord Clare (24376), out of Fanny Gwynne by Fifth Grand Duke (19875).—Mr. G. Pain, 66 gs.
Lady Semple Spencer, red, calved August 18, 1867, by Lord Clare (24376), out of Lady Sylvia Spencer by Fifth Grand Duke (19875).—Mr. Fenton, 61 gs.
Lady Selma Spencer, red and white, calved September 23, 1867, by Lord Clare (24376), out of Lady Sophia Spencer by Second Duke of Thorndale (17748).—Mr. Martin, 33 gs.
Grace Darling, red, calved October 28, 1867, by Lord Clare

(24876), out of Grace Howard by Marmaduke (14897).—Mr. Booth (Barnet), 32 gs.

Lady Sonora Spencer, red, calved December 18, 1867, by Lord Claret (24876), out of Lady Susan Spencer by Second Duke of Airdrie (19600).—Mr. Dormer, 43 gs.

Daisy, roan, calved January 24, 1868, by Lord Claret (24876), out of Day Lily by Second Duke of Thorndale (17748).—Mr. Barnard, 36 gs.

Florence Gwynne, roan, calved June 19, 1868, by Fifth Grand Duke (19875), out of Faustina Gwynne by May Duke (18320).—Lord Skalmersdale, 155 gs.

Frisky Gwynne, roan, calved August 15, 1868, by Thorndale Knightley (23065), out of Fanny Gwynne by Fifth Grand Duke (19875).—Mr. Pain, 80 gs.

Lady Sonnie Spencer, red and white, calved October 12, 1868, by Fifth Grand Duke (19875), out of Lady Sophia Spencer by Second Duke of Thorndale (17748).—Mr. Barnard, 61 gs.

Flavia Gwynne, roan, calved October 22, 1868, by Oxford Gwynne (24711), out of Flossy Gwynne by Twelfth Duke of Oxford (19633).—Mr. Fenton, 57 gs.

Flora Gwynne, red, calved January 3, 1869, by Oxford Gwynne (24711), out of Fairy Gwynne by Fifth Grand Duke (19875).—Mr. Pain, 50 gs.

Fama Gwynne, red and a little white, calved June 12, 1869, by Grand Duke of Lightburne (26290), out of Fanny Gwynne by Fifth Grand Duke (19875).—Mr. Foster, 43 gs.

Ora Gwynne, red and a little white, calved July 9, 1869, by Grand Duke of Lightburne (26290), out of Orange Gwynne by Fifth Grand Duke (19875).—Mr. Foster, 110 gs.

Gipsy Gwynne, red and a little white, calved July 24, 1869, by Grand Duke of Lightburne (26290), out of Goody Gwynne by Fifth Grand Duke (19875).—Mr. Lynn (Stroxtion), 35 gs.

Spicy Lightburne, roan, calved August 16, 1869, by Grand Duke of Lightburne (26290), out of The Sort by 5th Grand Duke (19875).—Mr. J. K. Fowler, 47 gs.

Fawley Belle, red and a little white, calved Nov. 2, 1869, by Fifth Grand Duke (19875), out of Fawley 4th by Fourth Grand Duke (19874).—Dr. McIntosh, 155 gs.

Lady Sylvia Spencer, red, calved December 30, 1869, by Grand Duke of Lightburne (26290), out of Lady Susan Spencer by 2nd Duke of Airdrie (19600).—Mr. Bearle, 30 gs.

Flossy Gwynne, red, calved November 9, 1869, by Spectre (27545), out of Fleda Gwynne by Lord Claret (24876).—Mr. Dickers, 26 gs.

Mighty Gwynne, roan, calved February 2, 1870, by Grand Duke of Lightburne (26290), out of Fairy Gwynne by 5th Grand Duke (19875).—Mr. Foster, 45 gs.

BULLS.

Grand Duke of Lightburne (26290), red and a little white, calved June 8, 1867, by Sixteenth Grand Duke (24068), out of Red Rose 4th, by 4th Grand Duke (19874).—Captain Webb, 90 gs.

Spectre (27545), roan, calved August 15, 1867, by Patrician (24728), out of Sorceress by Moccasin (18406).—Mr. Wythes, 43 gs.

Granville Gwynne, red and white, calved July 7, 1868, by Lord Claret (24876), out of Goody Gwynne by Fifth Grand Duke (19875).—Mr. Pain, 190 gs.

Lord Knightley, red, calved September 30, 1868, by Thorndale Knightley (23065), out of The Sort by Fifth Grand Duke (19875).—Mr. S. K. Welt, 54 gs.

Duke of Fawley, red, calved November 13, 1868, by Fifth Grand Duke (19875), out of Fawley 4th by 4th Grand Duke (19874).—Mr. Playne, 71 gs.

Stanley Spencer, red, calved January 25, 1869, by Fifth Grand Duke (19875), out of Lady Susan Spencer by 2nd Duke of Airdrie (19600).—Mr. Booth (Barnet), 27 gs.

Sydney, roan, calved January 30, 1869, by Oxford Gwynne (24711), out of Syrup, by 5th Grand Duke (19875).—Mr. S. K. Welt, 70 gs.

Famous Gwynne, roan, calved June 30, 1869, by Fifth Grand Duke (19875), out of Faustina Gwynne by May Duke (18320).—C. Irving (Australia), 110 gs.

Father Gwynne, roan, calved July 20, 1869, by Fifth Grand Duke (19875), out of Fatima Gwynne by 2nd Duke of Thorndale (17748).—Mr. Smith, 47 gs.

Squire Spencer, roan and white, calved October 14, 1869, by Fifth Grand Duke (19875), out of Lady Sophia Spencer by 2nd Duke of Thorndale (17748).—Mr. Armstrong, 27 gs.

Sam Spencer, red and white, calved October 25, 1869, by Grand Duke of Lightburne (26290), out of Lady Selina Spencer by Lord Claret (24876).—Mr. Coleman, 22 gs.

Foster Gwynne, red and a little white, calved November 1, 1869, by Grand Duke of Lightburne (26290), out of Flossy Gwynne by 12th Duke of Oxford (19633).—Mr. Blundell, 32 gs.

General Darling, red, calved November 9, 1869, by Grand Duke of Lightburne (26290), out of Grace Darling by Lord Claret (24876).—Mr. Brown, 22 gs.

Otha Gwynne, red and white, calved November 23, 1869, by Grand Duke of Lightburne (26290), out of Orphan Gwynne by Duke of Gloister (11382).—Sir W. Broke, 80 gs.

Syphon, red, calved January 6, 1870, by Grand Duke of Lightburne (26290), out of Syrup by 5th Grand Duke (19875).—Not well.

Senator Spencer, red, calved March 1, 1870, by Grand Duke of Lightburne (26290), out of Lady Sonora Spencer by Lord Claret (24876).—Mr. Thorpe, 21 gs.

SUMMARY.

	£	s.	d.	£	s.	d.
38 Cows.....	77	18	6	2,951	11	0
15 Bulls.....	54	19	0	824	5	0
53 Averaged	71	4	10	3,775	16	0
26 Gwynne averaged				281	18	10

SALE OF MR. MURTON TRACY'S SHORTHORN HERD.

AT EDEN BRIDGE, KENT, MAY 5.

BY MR. H. STRAFFORD.

A sale of a fashionable bred herd of Shorthorns, when within a easy reach of London, never comes to the hammer at a better time than on a May morning, and Mr. Tracy had a most successful sale. The catalogue was unique in its way, containing forty-seven animals, fourteen of which were bulls. It consisted of only three tribes, and the bull Patrician (24728), but of these three tribes, one, the Sweethearts, the great attraction of the sale, numbered 39 animals; four were Cleopatras, and three Surmises. The rapid growth of the Sweetheart family is something wonderful. Mr. Tracy bought the first lot, Sweetheart 3rd, when seven years old, at the Milcote sale in 1860, for 91 gs, and she was the "herd matron" of the whole thirty-nine, of which nine were her own daughters and sons; in all she had produced seventeen calves, several being twins. Some of these twins had also produced twins, and al-

together the cattle had been so fruitful that Mr. Tracy's small farm was overstocked, so he cleared them all out. Only one female had been sold privately, and that was a heifer purchased last year by Mr. Thornton to go to Australia, indeed two were selected, but one, Sweetheart 19th, being too far gone in calf, had to be left, and this same heifer now brought 220 gs.!

It may not be uninteresting to relate how these Sweethearts were bred. It is supposed that Colonel Trotter bought the family originally from Mr. Robert Colling, and after adding two or three generations it was sold into Northamptonshire, probably to Mr. Tibbets; from him it passed to the Right Hon. Charles Arbutnot, whom it is said bred Sylph by Sir Walter (2637) in 1831. This cow was sold to Sir Charles Knightley, and afterwards to Earl Spencer, who thought very highly of her.

Mr. Arbuthnot bred a heifer, Graceful from Sylph, and she produced Charmer by Little John, which Mr. Adkins, of Milcote, bought in 1843, and bred Sweetheart, a white, by Accordion (5708) the dam of Mr. Tracy's cow Sweetheart 3rd in 1847.

It is the custom to call these animals Knightley's, but in truth Sir Charles Knightley bred neither male nor female in the pedigree; moreover it has been considered that Bates blood is the only cross suitable to them, but in all Mr. Tracy's Sweethearts there was scarcely a drop of Bates blood; in fact, they are full of Booth. Accordion (sire of Sweetheart) was by a son of Mr. Booth's Cossack, out of Lady Fairfax, by Snowball, who was out of Mr. Booth's Lady Sarah. Then Daybreak (11338), sire of Sweetheart 3rd, was by Earl of Dublin, a bull of pure Princess blood, from Starlight by the same Snowball, so that the same strain of blood flowed through the veins of both dam and sire. Sweetheart 3rd was bought in calf and produced twins, Sweethearts 5th and 6th, by Mameluke (13289), which is the only animal bred by Sir Chas. Knightley. These two cows were lots 3 and 4 in the sale and certainly remarkably fine animals, especially the 5th, whose portrait Mr. Strafford gave in vol. xvi. of the *Herd Book*. Mr. Tracy used, in order to preserve the fine loin, ribs, and shoulders The Baron (13833), got by Mr. Booth's Baron Waraby, from Bon Bon, a daughter of Sylph, bred by Karl Spencer. Mr. Barnes's Duke of Leinster (17794), from the noted Mantalini family, was hired a short time, and then the sons of these bulls, from Cleopatra and Sweetheart cows, followed until 1868, when he purchased Patrician, of Sylph and Princess blood, at Mr. Adkin's sale for 170 gs. Thus in selecting sires Mr. Tracy has always gone on an in-and-in principle, though not too closely combining the Sylph tribe with an admixture of fresh blood either through the sire or the dam. The result was a most prolific race of cattle, of great excellence and singular uniformity. Although Sweetheart and Sweetheart the 3rd, and her sire too, were white, not another animal was white; indeed, they were all remarkably fine deep roans, or reds with a very little white; they had a sweet docile expression of countenance, with very small "snail" horns, frequently inclining different ways; neat shoulders falling well on to the ribs, which were deep and round like barrels, loins broad and well covered, but hind-quarters often short and thin, and very patchy. Still, there was the unmistakable likeness and fine rich quality of flesh all through the stock. Sweetheart 3rd was led in first, and, although so old, was almost a model of good form, and a heavy milker also. At Mr. Tracy's special request she was allowed to pass without competition; the second lot, Cleopatra 3rd, was dead, and then entered what many considered the finest cow in the herd—Sweetheart 5th, who, although ten years old and down calving, realized the enormous sum of 245 gs. She was put up at 50 gs. Mr. Thornton bid a hundred, then Mr. Foljambe and Mr. Hetherington, on the part of some Cambrians, opposed each other up to 240 gs., which was bidden by Mr. Foljambe, and instantly covered by Lord Danmore's five. The quality and sweet looks of this cow, with her fine form and rich pile of roan hair, was beautiful to see, and some foreigners present seemed never willing to come away from her. Her twin-sister, not nearly so good in her loin, nor so large, nor so handsome, still made 120 gs. Then came a deep massive cow of the Cleopatra tribe, which went into Lincolnshire, and she was followed by four daughters of the Baron. The youngest, the 11th, was the best, but had a swollen knee, and went lame. The eldest, a red, in-calf, was next best, and went cheap enough at 51 guineas. She was purchased, with two other heifers, by Mr. Thornton, for Mr. Chaloner, in Ireland, who bred the Baron. A succession of high prices followed, until two Sweethearts by Baron of Rathcool (21233) entered; although these animals were so closely related to the rest, they had none of their good looks, and sold accordingly.

Hebe, descended from the Surmise or Secret family, was of pure Bates blood, and consequently was bought by Mr. Leney for 260 guineas. Although a fine rich roan, and with good handling, she had neither the size nor the good shoulders of the Sweethearts; nor was her back covered so well with flesh. Sweetheart 19th, by Count Leinster out of the 5th, was by many thought the plum of the sale. There was great competition between Mr. Oliver, Mr. Foljambe, Mr. White of Australia, and Mr. Foster, of Killhow, who eventually got her

at 220 guineas. A pair of beautiful in-calf twin two-year-olds were also great favourites. Mr. White bid strongly for both these, and got the last, considered the better of the two, at 200 gs. A very fine red heifer, by Count Leinster, out of the 11th, a Baron cow, went to Mr. Foljambe at 160 gs. Hebe's daughter, a red yearling by Patrician, was a great favourite, and Sir Curtis Lampon, who bred her dam, secured her after some strong competition. One blackwood calf would have been better kept out of the sale, but it made 23 gs., and some of the younger ones sold well.

There was a great falling off in the bulls, the tribe being clearly far from a bull breeding family. Patrician, a fine headed bull, with rather strong upright horns and deep body, brought but a little over butcher's price; and the best young bull, a very nice roan yearling, Reginald, fetched but 65 gs. Hebe's bull calf, a red hairy little fellow of great promise, went for 52 gs., and concluded this extraordinary sale, the prices of which are subjoined. The company, however was not large, but composed of men, many of whom have hitherto been associated with Bates' stock, but who were evidently disposed not to let fine animals of good blood go without purchase, and we hail this excellent sale as a healthier state of things, a beginning of the end of that prejudice for a "favourite sort," and the demand that there is likely to be for fine-looking thorough-bred cattle of any strain.

COWS AND HEIFERS.

Sweetheart 5th, rich roan, calved Oct. 1, 1860, by Mameluke (13289), out of Sweetheart 3rd by Daybreak (11338).—Earl of Danmore, 245 gs.
Sweetheart 6th, rich roan, calved Oct. 1, 1860, by Mameluke (13289), out of Sweetheart 3rd by Daybreak (11338).—Mr. W. W. Slye, 120 gs.
Cleopatra 5th, red and white, calved Oct. 27, 1862, by Duke of Leinster (17794), out of Cleopatra 3rd by The Baron (13833).—Mr. John Thornton (for Mr. W. Torr) 52 gs.
Sweetheart 8th, red, calved Aug. 1, 1863, by The Baron (13833), out of Sweetheart 6th by Mameluke (13289).—Mr. John Thornton (for Mr. R. Chaloner) 51 gs.
Sweetheart 9th, roan, calved Oct. 29, 1863, by The Baron (13833), out of Sweetheart 3rd by Daybreak (11338).—Mr. G. Paine, 105 gs.
Sweetheart 10th, red roan, calved April 15, 1864, by The Baron (13833), out of Sweetheart 5th by Mameluke (13289).—Mr. T. Conolly, 80 gs.
Sweetheart 11th, rich roan, calved Nov. 27, 1864, by The Baron (13833), out of Sweetheart 3rd by Daybreak (11338).—Mr. R. E. Oliver, 105 gs.
Sweetheart 12th, red and white, calved Nov. 14, 1865, by Duke of Albemarle (21560), out of Sweetheart 8th by The Baron (13833).—Mr. R. E. Oliver, 115 gs.
Sweetheart 13th, red, calved Dec. 18, 1865, by Baron of Rathcool (21233), out of Sweetheart 7th by The Baron (13833).—Mr. G. Barton, 34 gs.
Sweetheart 14, roan, calved Jan. 9, 1866, by Duke of Albemarle (21560), out of Sweetheart 3rd by Daybreak (11338).—Mr. G. Paine, 72 gs.
Sweetheart 15th, red, calved Aug. 11, 1866, by Baron of Rathcool (21233), out of Sweetheart 6th by Mameluke (13289).—Mr. R. Betts, 32 gs.
Hebe, roan, calved Oct. 3, 1866, by Rowfant 1st (22767), out of Sarmise by Duke of Gloster (11382).—Mr. F. Leney, 260 gs.
Sweetheart 16th, red and little white, calved Feb. 14, 1867, by Duke of Albemarle (21560), out of Sweetheart 8th by The Baron (13833).—Mr. John Thornton (for Mr. R. Chaloner) 81 gs.
Sweetheart 17th, roan, calved Feb. 18, 1867, by Count Leinster (23638), out of Sweetheart 3rd by Daybreak (11338).—Mr. J. Fawcett, 96 gs.
Sweetheart 19th, roan, calved March 22, 1867, by Count Leinster (23638), out of Sweetheart 5th by Mameluke (13289).—Mr. J. P. Foster, 220 gs.
Sweetheart 21st, roan, calved Feb. 5, 1868, by The Corsair (25291), out of Sweetheart 9th by The Baron (13833).—Mr. G. Paine, 120 gs.
Sweetheart 22nd, red and white, calved Feb. 13, 1868, by The Corsair (25291), out of Sweetheart 8th by The Baron (13833).—Mr. John Thornton (for Mr. R. Chaloner) 61 gs.

Sweetheart 23rd, rich roan, calved Feb. 24, 1868, by Last of the Barons (23081), out of Sweetheart 5th by Mameluke (13289).—Mr. J. Hetherington, 53 gs.

Sweetheart 24th, roan, calved Feb. 24, 1868, by Last of the Barons (23081), out of Sweetheart 5th by Mameluke (13289).—Mr. F. Bamford, 106 gs.

Sweetheart 25th, roan, calved March 5, 1868, by Count Leinster (23638), out of Sweetheart 3rd by Daybreak (11338).—Mr. F. Bamford, 170 gs.

Sweetheart 26th, roan, calved March 5, 1868, by Count Leinster (23638), out of Sweetheart 3rd by Daybreak (11338).—Mr. J. White (Australia), 200 gs.

Sweetheart 27th, roan, calved March 16, 1868, by The Corsair (23291), out of Sweetheart 13th by Baron of Rathcool (21233).—Sir C. M. Lampson, 45 gs.

Sweetheart 28th, red, calved Dec. 17, 1868, by Count Leinster (23638), out of Sweetheart 11th by The Baron (13833).—Mr. F. J. S. Foljambe, 150 gs.

Sweetheart 30th, red, calved Feb. 7, 1869, by Patrician (24728), out of Sweetheart 12th by Duke of Albemarle (21560).—Mr. J. K. Fowler, 71 gs.

Hebe 2nd, red and little white, calved April 9, 1869, by Patrician (24728), out of Hebe by Rowfant 1st (22767).—Sir C. M. Lampson, 270 gs.

Sweetheart 31st, rich roan, calved June 6, 1869, by Patrician (24728), out of Sweetheart 10th by The Baron (13833).—Mr. G. Moore, 74 gs.

Sweetheart 32nd, roan, calved Nov. 25, 1869, by Patrician (24728), out of Sweetheart 9th by the Baron (13833).—Mr. C. C. Dormer, 62 gs.

Sweetheart 33rd, roan, calved Jan. 7, 1870, by Patrician (24728), out of Sweetheart 14th by Duke of Albemarle (21560).—Captain J. J. Robinson, 23 gs.

Sweetheart 34th, red and little white, calved Jan. 16, 1870, by Patrician (24728), out of Sweetheart 13th by Baron of Rathcool (21233).—Mr. J. K. Fowler, 21 gs.

Sweetheart 35th, roan, calved March 13, 1870, by Patrician (24728), out of Sweetheart 11th by The Baron (13833).—Mr. W. W. Siye, 37 gs.

Sweetheart 36th, red and little white, calved March 31, 1870, by Patrician (24728), out of Sweetheart 12th by Duke of Albemarle (21560).—Mr. R. B. Sewell, 29 gs.

BULLS.

Last of the Barons (23081), roan, calved Dec. 20, 1864, by The Baron (13833), out of Cleopatra 3rd by The Baron (13833).—Mr. Mold, 29 gs.

Patrician (24728), roan, calved Nov. 10, 1865, by Chanter (19423), out of Princess by General Havelock (17952).—Mr. G. Barton, 42 gs.

Major (26793), rich roan, calved Jan. 4, 1868, by Count Leinster (23638), out of Sweetheart 11th by The Baron (13833).—Mr. H. Betts, 42 gs.

Reginald (27265), rich roan, calved July 3, 1868, by Last of the Barons (23081), out of Sweetheart 10th by The Baron (13833).—Mr. F. Bamford, 65 gs.

Sportman, rich roan, calved Feb. 14, 1869, by Patrician (24728), out of Sweetheart 13th by Baron of Rathcool (21233).—Not sold.

Red Gauntlet, red, calved Feb. 15, 1869, by Patrician (24728), out of Sweetheart 14th by Duke of Albemarle (21560).—Mr. J. Denchfield, 24 gs.

The Earl, roan, calved April 28, 1869, by Patrician (24728), out of Sweetheart 3rd by Daybreak (11338).—Mr. J. B. White, 34 gs.

Rob Roy, red and little white, calved May 8, 1869, by Patrician (24728), out of Sweetheart 16th by Duke of Albemarle (21560).—Mr. Wise, 25 gs.

Patrician the Younger, roan, calved May 11, 1869, by Patrician (24728), out of Sweetheart 19th by Count Leinster (23638).—Mr. Tindall (Australia), 41 gs.

The Kaimir, red, calved July 17, 1869, by Patrician (24728), out of Sweetheart 6th by Mameluke (13289).—Mr. J. Denchfield, 41 gs.

Wrestler, red and white, calved Nov. 17, 1869, by Patrician (24728), out of Cleopatra 5th by Duke of Leinster (17724).—Mr. H. Gorrings, 25 gs.

Champion, red, calved Dec. 21, 1869, by Patrician (24728), out of Sweetheart 15th by Baron of Rathcool (21233).—Mr. R. Betts, 15 gs.

Forester, red and white, calved Dec. 25, 1869, by Last of the Barons (23081), out of Sweetheart 8th by the Baron (13833).—Mr. Taylor, 15 gs.

Belvedere, red and white, calved March 28, 1870, by Patrician (24728), out of Hebe by Rowfant 1st (22767).—Mr. W. W. Siye, 52 gs.

SUMMARY:

	£	s.	d.	£	s.	d.
31 Cows	107	0	0	3,316	19	0
13 Bulls	36	7	0	472	10	0
44 Averaged	£26	2	6	£3,789	9	0

SALES OF STOCK IN SHROPSHIRE.

BY MR. W. G. PREECE, OF SHREWSBURY.

THE REVEREND J. BECKWITH'S SHORTHORNS AT EATON CONSTANTINE.

COWS.

Bonne Bouche, calved May 1st, 1860.—Mrs. Sankey, 30 gs.

Little Hope, calved April 7, 1863.—Mrs. Sankey, 31 gs.

Misletoe, calved December 24, 1864.—Mr. J. Stannier, 32 gs.

Ellie, calved December 13, 1865.—Mr. Horton, 63 gs.

Azalea, calved April 1, 1866.—Mr. R. L. Burton, 44 gs.

Lizzie, calved April 5, 1867.—Mr. W. F. Provis, 37 gs.

Nora, calved February 11, 1867.—Mr. Fox, 44 gs.

Ouida, calved April 19, 1867.—Mr. J. Bather, 25 gs.

May Flower, calved May 1, 1867.—Capt. Bulkeley, 42 gs.

Christmas Rose, calved December 15, 1867.—Mr. J. Bather, 36 gs.

Spot, calved December 27, 1867.—Mr. Fox, 37 gs.

Adela, calved April 3, 1868.—W. F. Provis, 33 gs.

Magnolia, calved April 7, 1868.—Capt. Bulkeley, 31 gs.

Lady Hope, calved April 9, 1868.—Mr. Stannier, 29 gs.

Kalmia, calved May 2, 1868.—Mr. Acton, 32 gs.

May Blossom, calved May 20, 1868.—Mr. Jefferson, 31 gs.

Rosanna, calved December 12, 1868.—Mr. Fox, 30 gs.

White Azalea, calved April 16, 1869.—Captain Wingfield, 26 gs.

Kate, calved April 24, 1869.—Mr. Jefferson, 20 gs.

Hebe, calved May 5, 1869.—Captain Wingfield, 23 gs.

Alberta, calved May 9, 1869.—Mr. Stannier, 36 gs.

Cigarette, calved January 28, 1870.—Mr. J. Bather 8 gs.

Two three-day's-old calves.—Mr. J. Bather, 11 gs. each.

BULLS.

Leander, calved Oct. 1863.—Mr. E. Barton, 43 gs.

Gourmand, calved Feb. 1, 1868.—Mr. Edwards, 28 gs.

Overplus, calved March 11, 1868.—Mr. Adney, 23 gs.

King David, calved June 16, 1868.—Rev. E. Warter, 31 gs.

Banterer, calved March 20, 1869.—Mr. Acton, 52 gs.

Tommy Dodd, calved March 28, 1869.—Mr. Watson, 36 gs.

Thady O'Flinn, calved April 25, 1869.—Mr. Brown, 38 gs.

St. Martin, calved Nov. 3, 1869.—Capt. Sladen, 17 gs.

MR. W. G. PREECE'S HEREFORDS AT SHREWSBURY.

Rose, calved 1867, with her bull calf.—Mr. Calcott, 19 gs.

Countess, with her heifer calf.—Mr. Miller (The Court), 22 gs.

Pink, calved 1867, with her bull calf.—Mr. Angus, 21 gs.

Ruby, calved 1864, with bull calf.—Mr. A. Burd, 23 gs.

Miss Windsor 2nd, calved 1860, with heifer calf.—Messrs. Crane, 40 gs.

Duchess, a grand fat cow.—Mr. Curzon, 25 gs.

Planet, a fat cow.—Mr. Curzon, 25 gs.

Bracelet, calved 1863.—Messrs. Crane, 29 gs.

Calf by Baron Halston (2943), dam Bracelet, calved Sept. 1, 1869.—Mr. E. H. Davies, 15 gs.

Verbena, calved Nov. 1863.—Mr. Preece, Cressage, 25 gs.

Kempton Lily, calved 1864, with heifer calf.—Mr. Instone, 36 gs.

May Flower, calved Aug. 1864.—Mr. Preece, 27 gs.

Melody, calved 1865.—Mr. Morris, 34 gs.

Stately, calved 1865.—Mr. Angus, 40 gs.

Patch, calved 1865, was not offered.

Strawberry, calved 1865.—Mr. Lewis, 31 gs.
 Blanche, fat, 20 gs.
 Lady Cow, calved 1865.—Messrs. Crane, 29 gs.
 Lady Stow, calved 1866.—Mr. Whitfield, 16 gs.
 Ringlet, calved 1866.—Mr. A. Burd, 24 gs.
 Belle of the Court, calved 1866.—Mr. Lewis, 35 gs.
 Courtier, calved Oct. 1, 1869, by Frodesley, dam Belle of the Court.—Mr. J. Bridgman, 30 gs.
 Lily of the Valley, calved 1868.—Mr. Williams, 26 gs.
 Minx, calved Dec., 1866.—Mr. A. Burd, 15 gs.
 Verbena 2nd, calved 1866, with bull calf.—Mr. Morris, 26 gs.
 Silver 3rd, calved 1866, with heifer calf.—Mr. Chorlton, 17 gs.
 Lady Halston, calved July, 1867.—Mr. Lewis, 24 gs.
 Peggy, calved 1867.—Mr. R. H. Maafen, 19 gs.
 Venus, calved 1867.—Mr. Williams, 27 gs.
 Gay Lass, calved 1867.—Mr. Lewis, 15 gs.
 Baroness, calved 1867.—Mr. Preece, Cressage, 27 gs.
 Water Lily, calved 1867.—Mr. Preece, Cressage, 27 gs.
 Parity, calved 1867.—Mr. E. H. Davis, 20 gs.
 Pansy, calved 1868.—Mr. A. Burd, 17 gs.
 Victress, calved 1868.—Mr. Calcott, 13 gs.
 Mermaid, calved 1868.—Mr. Acton, 14 gs.
 Pearl, calved 1868.—Mr. Charlton, 13 gs.
 Parity 2nd, calved 1868.—Mr. Hawkins, 14 gs.
 Star, calved 1868.—Mr. Hawkins, 16 gs.
 Carl, calved 1868.—Mr. Calcott, 12 gs.
 Bertha, calved June, 1869.—Mr. Crane, 9 gs.
 Lily Queen, calved 1869.—Mr. Lewis, 15 gs.
 Baron Halston, calved August, 1866.—Mr. Ainsworth, 28 gs.
 Pattern, calved July, 1868.—Mr. Williams, 50 gs.
 Lord Hereford, calved 1869.—Mr. Maafen, 31 gs.
 May Duke, calved April, 1869.—Mr. Angus, 32 gs.

SALES OF STOCK.

THE LATE MR. WILLIAM SHIPMAN'S AND MR. SNODIN'S SHORTHORNS.—These herds came to the hammer on the 11th inst., in the midst of a delightful rain. Although several of the pedigrees were ineligible for the Herd Book, yet good prices were obtained. Perseverance, a seven-year-old cow, sold for 41 gs. (Mr. W. Gentle, Bede.); Adeline, six years old, 42 gs. (Mr. W. Cox); Michaelmas Maid and Folly, both young cows, went (to Mr. Sutton, Derby) at 30 gs. each; Industry, a prize winner, fetched 70 gs. (Mr. W. Gentle); Melody, three years old, 60 gs. (Mr. G. Murray); Julia 10th, a yearling, 60 gs. went to the hon. H. Littleton, for Australia; Melodious, a calf, was bought for 36 gs., by Mr. J. H. Casswell, who also gave 70 gs. for Royalist (27370), the red three-year-old stock bull. The 39 cows and heifers averaged £27 6s., and the bulls, mostly calves, £23 12s. The combined herds realised a general average of £26 7s. 8d. Mr. John Thornton was the auctioneer.

MR. J. ANGELL JAMES' SHORTHORNS, AT BRIDGETOWN, STRATFORD-ON-AVON.—This herd was sold on Wednesday, May 18th, when a large company assembled. The cattle were of the Knightley and Charmer blood, and those of full pedigree had been bred from Mr. Adkins' Rosamond and Mr. Harris' Snowdrop. They were brought out in very nice condition, and the arrangements were everything that could be wished. After a luncheon in the barn, the company went to the ring-side, and paid the following as the chief prices: Strawberry, 8-years-old cow, 33 gs. (Mr. J. N. Norman); Rosemary, 8 years, 40 gs. (Mr. Cottrell Corbet); Rosalind, 6 years, 47 gs. (Mr. H. Moore); Spangle, 5 years, 35 gs. (Mr. Lett); Rosalie 2nd, 31 gs. (Mr. W. Strickland); Rosa, 3 years, 40 gs. (Rev. H. Beckwith); Sunshine, 3 years, 37 gs. (Mr. T. Harris); Sarah, 2 years old, 47 gs. (Mr. Jas. Webb); Sprightly, a yearling, 37 gs. (Mr. J. Baldwin); Rosebud, 12 months old, 35 gs. (Mr. Furlay Dun). The young stock were mostly after the white aged bull Lackey, who went to Mr. Harris at 31 gs. A large proportion of the animals were white. The entire herd of 46 head averaged £25 15s., and the 27 full pedigrees £28 2s. Mr. Thornton was the auctioneer.

THE LATE COUNTESS DE LA WARR'S SOUTHOWNS.—This flock, brought into the market out of season, and low in condition, realized nevertheless some good prices at Knole Park, Seven Oaks, on Friday, May 20. Some of the ewe tegs sold as high as 65s. each, and the ewes ranged from 50s. to 63s.

each. The sum total of the sale was about £1,500 for 590 sheep. Mr. Thornton was the auctioneer.

SALE OF STOCK TO GO ABROAD.—We stated a fortnight since that Mr. Booth had sold his prize cow, Patricia, for 1,000 guineas. Messrs. Walcott & Campbell, of New York, who are the buyers, also purchased Bride of the Vale for 1,000 gs., from Warlaby, and have now taken the heifer-calf, Minaret, as a companion for Patricia, at 250 gs. Col. Towneley's Baron Oxford's Beauty accompanies them, at 500 gs.; as also two heifers from Mr. Torr, of the Waterloo tribe, at 250 gs.; with Orange Gwynne and Goody Two Shoes, recently bought at the Biddenham and Osberton Sales, and Charming Rose from Stroxtan. An Ayrahire bull and a cow and a heifer, winners at the Glasgow meeting, go out with these Shorthorns, as well as some longwoolled sheep from Mr. Marshall, and Berkshire pigs from Mr. Bailey, of Swindon. They left the Thames on Tuesday last by the "Daniel Webster," a sailing vessel, and, with them, Mr. Thornton sent out two pure-bred young bulls from Capt. Aveling and Mr. Pawlett, and two in-calf heifers from Mr. Blundell and Mr. Gamble, as well as some longwoolled Cotswold and Southdown sheep from Mr. Bell, of Colorado.

EDINBURGH TOWN COUNCIL.

At a meeting of the Edinburgh Town Council, the CLERK submitted a report from the Lord Provost's Committee, recommending the Council to take no action with reference to (1) the Game Laws Abolition Bill, brought in by Mr. Taylor, and (2) the Poaching Prevention Act Repeal Bill.

MR. HOWDEN moved the adoption of the committee's recommendation, which was duly seconded.

MR. ROMANS moved, as an amendment, that the Council petition the House of Commons in favour of Mr. Taylor's bill. He held that every man who was a tenant of land—whether it was merely a "kail-yard" or a tract of ten thousand acres—if he paid a rent for it, should have a perfect right, without let or hindrance, to kill every wild animal that was on or above it. Anything short of that, he held, would not put an end to the immorality that arose out of the operation of the present Game-laws.

MR. WILSON seconded Mr. Romans' amendment. While admitting that much might be said in favour of the Game-laws, on the ground that there must be some pastime afforded to country gentlemen, he held that the operation of the Game-laws was the cause of many evils, and he believed that the country would be much the better of their being entirely abolished.

MR. WORMALD, in supporting the amendment, said he regarded Mr. Taylor's bill as being more in accordance with the popular wishes of the country than any that had ever yet been introduced into the House of Commons. All previous bills had been of the nature of a compromise; and though they might yet require to agree to a compromise on this as they had just done in regard to the famous Annuity-tax question, he thought their best course in the meantime would be to petition generally in favour of that bill.

MR. ROWATT said he would be in favour of a compromise that would exclude hares and rabbits from the game list. That was the only means by which he thought a settlement satisfactory to the members of the agricultural interest could be effected.

MR. MACKNIGHT supported the recommendation of the committee.

Baillie LEWIS held that it was unfair that the proprietors of land should have the power of diverting it so much from the great purpose which it should serve—that of producing food for the people. He agreed with Mr. Rowatt that the winged game should be separated from the hares and rabbits, which were the principal cause of destruction to the farmers' property. He thought to put hares and rabbits out of the game list would be the most practicable compromise at present, and one that would be most satisfactory to the agricultural community (Hear, hear).

MR. ROMANS then agreed to modify his amendment, leaving it as follows: "That the Council petition in favour of Mr. Taylor's bill so far as it applies to hares and rabbits."

On a division, the amendment was carried by a majority of 90 to 7.

THE GAME LAWS AND GAME BILLS.

At a special meeting of the Kincardineshire Farmers' Club, Mr. TAYLOR (Gushnie), the President, in the chair, said: I shall only make a few remarks, and take the Bills in the order they have been introduced and ordered by the House of Commons to be printed. Mr. Loch's bears date 10th February, and would confer the inalienable right on the tenant to protect his crops from destruction by hares and rabbits, without which any game reform would be of no value to the farmer. I think the 4th clause in Mr. Loch's Bill, conferring this right, might be better expressed, as it is objectionable that a contract or covenant should be entered into with the knowledge that it is illegal and may be broken. It also provides for compensation for damage done to crops by game coming from neighbouring preserves, and for the abolition of cumulative penalties—for the transfer of all game cases from justices to the sheriffs. These provisions will commend themselves to your sense of justice and the demands of necessity. Mr. Taylor and Mr. McCombie's Bill, printed by order 16th March, is a very short and simple one, and provides for the total abolition of the Game Laws, on and after 14th February 1871. I know that many of you have come slowly to the conclusion that total repeal is the only solution of the difficulty; but although the Game Laws we abolished to-morrow, the farmers would have no protection against the reservation of hares and rabbits by the landlord. And our legislators make no secret that, if the Game Laws were abolished, the abolition would be accompanied by a stringent Trespass Act, which would shut up Scotland not from the poacher, but from the mass of the people. Perhaps the most important, because backed by the might and influence of Government, is the Lord Advocate's Bill, printed 11th April. That Bill has been received with great favour generally at all the county meetings over Scotland, except at our own in Kincardineshire, where a disapproval of it was carried by nearly three to one. But just in proportion to its welcome acceptance by the landowners has been its all but unanimous and emphatic condemnation by the tenantry. Its provisions appear fair and plausible to the landowner, or the inexperienced reader, but would be utterly ineffective in giving protection. To assimilate the Game Laws of Scotland to those of England and call that reform is a sham, and discreditable to Government; and I warn our rulers that, if they attempt to pass such a Bill, they will endanger the Liberal interest in half the counties of Scotland. The battle was fought and won at last election on the questions of game and hypothee, in the faith that a Liberal Government would redeem the pledges given by its members and supporters on the hustings; but, so far as the Government Bill is concerned, the farmers of Scotland are in the meantime doomed to bitter disappointment; but there is one good it has done—it has for once produced union among them, for it has been received from one end of Scotland to the other with one universal burst of indignation and disapproval. The other remaining Bill—that introduced by Mr. Hardcastle and Sir Wilfred Lawson, and printed on 2nd May, the last and worst of the series—adds rabbits and foxes to the game list, makes game property, and the party intermeddling with it a thief and felon, subject to imprisonment with hard labour, or to a fine of £20. At the banquet to Mr. Parker at Perth, I heard Mr. Hardcastle say he had nothing to say personally against Sir William Stirling Maxwell, "but his politics I abhor." I would say the same of his Game Bill, that "I abhor" it. These provisions are so repugnant to common sense, and in the opposite direction of the reform that is required and demanded, that I cannot believe the House of Commons—or, at all events, its leaders—will seriously entertain them; but, be that as it may, our duty to-day is to give a clear expression of opinion as to what we approve and what we disapprove of. My late worthy proprietor, Captain Burnett of Monboddie, had inserted in some of his leases a game clause, which is worthy of imitation, and I shall read it to you—"You are to protect the woods, and keep down rabbits and all other vermin which destroy the crops." Mr. Taylor here read the resolutions, and it was agreed that the meeting consider them *seriatim*.

The first resolution was:

"That the Game Laws as they at present exist are iniquitous in principle, tyrannical in administration, and in all parts of the country lead to increase of local taxation, impoverishment

of tenant-farmers, demoralisation of the people, and debasement of the aristocracy, landowners, and game tenants."

Mr. GREIG (Harristown) said he quite agreed with this resolution, and moved its adoption.

Mr. ALEXANDER (Bent) seconded, and the resolution was agreed to.

The second resolution was:

"That the Bill introduced into the House of Commons by the Lord Advocate will not mitigate any of those evils, but will greatly add to the already tremendous power of the landlord by increased inducement to litigation in the higher Courts; and the owner being the richer party, such litigation, without limit except the Court of last resort, would often be more ruinous to the tenant claiming compensation than the original loss; therefore, this meeting is of opinion that the Bill is altogether unworthy of a Liberal Government, and ought to be opposed by every legitimate means."

Mr. GREIG said he lately came in contact with a good many English farmers, and had had conversations with them on the Game Laws, and he found that the abuse existed as much there as in Scotland. An assimilation of the laws of the two countries would not give relief.

Mr. MITCHELL (Burnton) moved, and Mr. KINNAR (Milton or Mathers) seconded, the adoption of the resolution, which was unanimously agreed to.

The terms of the third resolution were:

"That tenant-farmers ought to have the inalienable right of defending their crops from destruction by wild animals, whether known by the designation of game or by any other term; and such inalienable right would be no greater interference with the liberty of contract than contained in the Irish Land Bill now under consideration of Parliament, or, with the rights of private property than under the Cattle Diseases Act, which authorizes the slaughter of the farmer's stock for the public good."

The resolution was agreed to.

The fourth was in the following terms:

"The Game Laws are a fertile source of crime, pauperism, and of increase of local taxation. By a Parliamentary return for 1869 it appears there were 10,346 convictions under these laws in England and Wales alone, which must have been the means of reducing at least 20,000 individuals to pauperism, to be supported at the public expense; and in a previous period of ten years there were 42 convictions for homicide and murder, representing 68 lives lost: therefore, this meeting is of opinion that these laws ought to be made less sanguinary, less oppressive, and more in accordance with the spirit of the age."

Mr. ALEXANDER thought the last clause should be left out, and the words "The Game Laws ought to be abolished" inserted.

The CHAIRMAN did not agree with this proposal, as he did not go the length of total abolition.

The vote was then taken for Mr. Alexander's proposal of total abolition, as against the Chairman's resolution for modification, when the amendment was lost by two votes—the numbers being 11 and 13.

The fifth resolution was in the following terms:

"That a Liberal Government, fully aware of the deplorable amount of pauperism, homicide, and murder caused by the Game Laws in England and Wales, and also of the enormous destruction and check to production of the food of the people, the impoverishment and ruin of tenant farmers, from the ravages of game, ought not to have cast contempt on the just complaints of the tenant farmers and people of Scotland by proposing to assimilate the Game Laws of this country to those of England."

Mr. MIDDLETON (Bainakettle) proposed that the word "Liberal" be deleted (laughter).

The CHAIRMAN said he wanted to make a strong condemnation of the Government.

Mr. MIDDLETON.—Just strike out that one word (laughter).

Mr. GREIG.—Put it in Italics (laughter).

The resolution was agreed to as proposed.

The sixth resolution was as follows:

"That Mr. Loch's Bill would confer on tenant farmers the inalienable right of defending their crops from destruction by hares and rabbits, provides for compensation for injury done to crops by vermin coming from neighbouring estates, for

transfer of all Game Law cases from the Justices to Sheriff Courts, for abolition of cumulative penalties for the same offence, and in so far this meeting approves of the Bill, and resolves to petition in its favour; but it does not give protection to the Highland farmer against the vast herds of deer and packs of grouse which in late seasons come down from the higher grounds and devour their crops, and in that, and other respects, might be amended."

Mr. ALEXANDER decidedly objected to this resolution, and suggested that consideration of it be delayed till the eighth resolution was read.

This was agreed to.

The seventh resolution, which was agreed to, was in the following terms:

"That were farmers enabled to protect their crops from injury by game, the Land Laws amended, the 'false and evil Law' of Hypothec and the oppressive Law of Distraint abolished, so as to render it safe for farmers and those who deal with them to lend their capital more liberally to landowners in the cultivation of their estates, there is good reason to believe that in a few years, instead of the 11 millions quarters of grain now grown in the United Kingdom, the 23 millions required annually for consumption could easily be produced at home."

The eighth resolution was thereafter read, and was as follows:

"That seeing almost all landowners are preparing to set legislation at defiance, by the insertion of stringent clauses, new leases for reservation, including rabbits, notwithstanding any change in the law which may take place, the total abolition of the Game Laws, as proposed by Mr. Taylor, Mr. Jacob Bright, and Mr. McCombie's Bill, would fail to give relief from the evils complained of, unless a provision be introduced rendering it illegal for parties to enter into covenants for the reservation of ground game."

Mr. ALEXANDER proposed the following amendment, which, he said, was more consistent with the general tenor of all the resolutions put together:

"That, as no satisfactory amendment of the Game Laws has hitherto been devised, this meeting approve of the Bill introduced by Mr. P. Taylor, Mr. Jacob Bright, and Mr. McCombie for their total repeal; but, seeing that certain landowners are already preparing to set legislation at defiance by insertion of stringent clauses in new leases for reservation of game, including rabbits, notwithstanding any change in the law which may take place, this meeting instruct their Committee to correspond with Mr. Taylor to have such clauses made illegal by his Bill."

Mr. DUNN seconded.

Mr. KINNAR moved that it remain.

Mr. GREIG seconded.

On a division, six voted for and twelve against striking out the resolution.

The resolution as proposed was therefore agreed to.

The eighth resolution was also agreed to.

The ninth resolution was as follows:

"That the Bill introduced into Parliament by Mr. Hardcastle and Mr. Wilfred Lawson is both tyrannical and jesuitical. By making foxes game the highland farmer defending his flock would be branded as a felon; it declares that no one shall be criminally prosecuted for killing game, and in a subsequent clause makes game to be private property, and all who intermeddle with it thieves and felons. Any child within the kingdom who may put its hand into a bird's nest to break or take an egg, or school boy who may catch a wild rabbit or kill a tame one of his own, would be liable to six months' imprisonment with hard labour, or to a fine of £20. Therefore, this meeting look upon the Bill as brutalising, and 'abhor' it."

Mr. GREIG thought the meeting should agree to say that the Bill was too ludicrous to be worthy of consideration.

Mr. DUNN proposed that the meeting petition against Mr. Hardcastle's Bill altogether, and said he would not send out a resolution to the public in the form proposed.

The meeting agreed to strike out the words "brutalizing" and "abhor," and to add "the meeting consider the Bill so absurd as to be unworthy consideration."

The Chairman was authorised to sign a petition in terms of the resolutions adopted; and, after he had been thanked for presiding, the proceedings terminated.

THE GAME LAWS. TESTIMONIAL TO LORD LEIGH.

The following address has been presented:—

"To the Right Honourable the Lord Leigh.

"We, the undersigned tenants of your Lordship's Stoneleigh Estate, take this opportunity of tendering our grateful recognition of your Lordship's liberality in granting to us the privilege of killing hares on our respective farms—a privilege the more valued because it has been unsolicited. Ever ready to perform all the duties of a landlord, your Lordship has again been foremost in discouraging the preservation of game to the injury of the tenant. The example which your Lordship has set will, we earnestly hope, be extensively followed by other landowners, and will remove a frequent source of irritation and discontent. We fully appreciate your Lordship's kind consideration, and wishing you many years of health and happiness, we subscribe ourselves your Lordship's obedient servants,

William Campbell
William T. Wakefield
Jos. W. Jenaway
Edward Swinnerton
John Lee
Thomas Hands
Thomas Harris
William Norman
Joseph Jaggard
Richard Robbins
Thomas L. Umbers
Samuel L. Simpson
A. M. Harborne
H. P. Adcock

E. B. Twycross
Josh. Shakespear
William Jones
Geo. Darlinson
James Dormer
James Harris
John Burbery
William Jaggard
John Hiorns
Henry Judd
Edward Judd
William Sammons
Thomas Jones

TENANT RIGHT.

We last week had the pleasure of recording that our highly respected neighbour, the Lord Lieutenant of the county (Lord Leigh), had practically abolished the Game Laws on his estates, by allowing his tenants to kill the hares and rabbits on their respective holdings. We have now to chronicle another instance of discernment of the signs of the times on the part of his Lordship, which is worthy of imitation throughout the land. We believe the following circular has just been distributed among the tenantry on Lord Leigh's estates by Mr. Geo. Jones, his Lordship's steward:—

Estate Office,
Stoneleigh Abbey, Kenilworth.

27th April, 1870.

Dear sir,—I am directed by Lord Leigh to draw your attention to the fact that should you, from any cause whatever, quit the farm you now hold under him, every unexhausted improvement, made at your expense, on the farm will be paid to you—the value to be ascertained by two persons, one chosen by you and one by his Lordship, they appointing an umpire, whose decision (in case they differ) shall be final and conclusive.

Of course you will see that before you commence improvements they must be sanctioned by Lord Leigh (through the agent), to whom applications, stating the nature, cost, situation, &c., of the work (with plans when necessary) must be made. When sanctioned, a written authority will be given by the agent. This must be carefully preserved; it will evidence your claim and prove the date of permission.

So few changes of tenants have taken place on the estates (except from deaths, when relations have succeeded) that hardly a case has arisen (indeed I do not know one) during his Lordship's possession of the estates that this dealing with a just claim could be recognized.

Your very obedient servant,
GEORGE JONES.

—*Coventry Standard.*

DEATH OF STOCKWELL.—The *Sporting Gazette* announces the death of the celebrated racing sire Stockwell, whose success at the stud obtained for him the title of "The Emperor of Stallions." The cause of death was inflammation of the inner coating of the intestines. With a view of having his skeleton set up hereafter, Stockwell has been buried in lime in Hooton Park.

BATH AND WEST OF ENGLAND SOCIETY AND SOUTHERN COUNTIES ASSOCIATION.

A meeting of the Council was held on Tuesday, the 26th April, at the White Lion, Bristol, E. S. Drewe, Esq., Vice-President in the chair. There were also present: The Hon. and Rev. S. Best, Colonel R. Brant, Colonel H. A. F. Luttrell, Major R. Trood, Rev. T. Phillpotts, Rev. A. C. T. yane, Messrs. R. Bembridge, C. Bush, R. H. Bush, Thomas Danger, J. Daw, C. Edwards, M. Farrant, H. Fookes, John Gray, Jonathan Gray, J. D. Hancock, J. H. Holley, J. H. Kennaway, M.P., J. Webb King, Meade King, J. E. Knollys, J. Lush, H. St. John Maule, H. Middleton, J. C. Moore Stevens, R. Stratton, W. Thompson, H. Williams, W. Wippell, H. Spackman (Official Superintendent), W. Smith (Official Accountant), and J. Goodwin (Secretary and Editor).

It was reported that the entries of Stock and Implements for the Taunton meeting were numerous, ranking next to Bristol and Southampton, and exceeding those at any other meeting of the Society, notwithstanding the absence of local prizes. The annual meeting of members was announced for 12 o'clock on the Wednesday in the show week.

Messrs. Gibbs and Hine, the Society's contractors, were authorised to supply refreshments in the implement trial fields, under the direction of the stewards.

It was ordered that for the future only one number of the Society's Journal be published annually, but that the reports of the Taunton meeting be brought out in a separate form as soon as possible after the Show.

The Earl of Cork was nominated President of the Society for the year 1870-1.

Mr. E. B. Willems, M.P., was nominated a vice-president of the Society.

The new members elected were: W. Brock, Temple Meads, Bristol; Chilcott and Gardiner, 5 and 6, Nelson-street, Bristol; H. Denton, St. Peter's Works, Wolverhampton; J. Dredge, Holt Farm, Pilton, Shepton Mallet; A. R. C. Drewe, The Grange, Honiton; G. Garas, Churchill Heath, Chipping Norton; C. Hodge, Burleigh, Devonport; J. C. King, Exeter; Rev. G. Lamb, Moss Cottage, St. Austell; E. Legg, Coombe Down, Beaminster; A. Malet, Pyrland Hall, Taunton; A. Mason, Dorchester; J. Pope, Pennsylvania-road, Exeter; W. E. Surtees, Tainfield, Taunton; C. B. Stiby, Tylfield, Pewsey; R. Sawanick, College Farm, Cirencester; Wallis and Stevens, Basingstoke; R. Woodman, Southeast, Lewes, Sussex.

THE BATH AND WEST OF ENGLAND SOCIETY.—

It will be seen that at the last meeting of the Council it was very judiciously determined to revert to the plan of issuing only one number of the Society's Journal during the year. This will, no doubt, enable the Editor to bring the work again up to its previous worth. Reports of the Shows are, however, to be published in a separate form immediately after the Meetings.

THE REPEAL OF THE MALT TAX.

PROPOSAL FOR A NATIONAL ASSOCIATION.

Mr. Joshua Fielden, M.P., unable from Parliamentary duty to take part in the agitation commenced by the Yorkshire Association, has addressed the president, Mr. E. S. Cayley, of Wydale Hall, on the subject. Mr. Fielden says, "If the farmers and landed gentry would take this matter up and form a National Association for the repeal of the Malt Tax, to be composed of delegates from every Chamber of Agriculture in the country, I am sanguine in my belief that the Malt Tax would soon be repealed, and a licence to brew substituted. The gradual reduction of the duty would then be a matter which we may fairly look forward to. If you will look through the recent debate in the House of Commons you will find it was admitted that the tax is 70 per cent. on the price of barley in the first instance, and even Mr. Gladstone himself dared not contradict my statement that the consumer of public-house beer pays a tax of at least 140 per cent. The subject is now, therefore, in a very different state to what it was when we had our Anti-Malt-tax Association in existence. The recent reduction in the sugar duties makes the injustice of the Malt

Tax still more apparent. It cannot too often be repeated that sugar is now taxed about 25 per cent., tea 25 per cent., champagne 5 per cent., while malt is taxed 70 per cent., and in such a way that before the beverage, which malt is made into, reaches the consumer, he has to pay a tax of 140 per cent. at least, and often much more. The tax, too, is taken off when malt or beer is exported, so that the foreigner gets malt and beer duty free, while the Englishman has to pay this heavy duty on a product of his native land. Can anything be more monstrous? I need not, I am sure, tell you how glad I shall be to take part in any national movement for the repeal of this unjust and inquisitorial tax." At Malton, on Monday, the executive of the Yorkshire Anti-Malt-tax Association agreed upon the following form of petition to Parliament:

To the Honourable the Commons of Great Britain and Ireland in Parliament assembled.

The petition of the undersigned inhabitants of ———, in the county of ———, humbly sheweth,

That your petitioners grow barley and other grain in the said county. That they have heard with amazement that it is proposed to reduce the duty on sugar, and not to touch the duty on malt. That the value of malt depends on the sugar it will produce. That one cwt. of sugar, a foreign production, which is equal for brewing purposes to one quarter of malt, is to be taxed 5s. That one quarter of malt is to be taxed 21s. 8d. That this is a protective duty of 16s. 8d. in favour of the foreign article as against the British production. That champagne, a foreign production, and the rich man's drink, is taxed at 5 per cent., and that beer, a home production, and the drink of the people, is taxed at least 70 per cent. Your petitioners therefore pray your honourable House to repeal or reduce the duty on malt, the home-grown article.

And your petitioners will ever pray, &c.

A public meeting was held at Malton on Saturday afternoon on this subject.

THE DUMBARTONSHIRE AGRICULTURAL SOCIETY.

The annual show of the Dumbartonshire Agricultural Society was held at East Bridge-end, Dumbarton. The day was fine, although a rather chilly wind blew from the west. Dumbartonshire has for many years been notable for the excellence of the Ayrshires reared on the southern slopes of the county; and these were the principal attraction on Tuesday. There were upwards of a dozen classes for the breed. The competition was lively, and the animals shown were of excellent quality. The cows in milk were particularly good, as were the aged bulls. The first and second prizes in the class for the best cow in milk, were secured by Mr. Martin, Auchenfroe, with the pair of animals which were awarded similar honours at the Glasgow Show last week. The whole competing were a more than average lot; but some judges thought that Mr. Martin's second cow had a decidedly Highland look, especially about the horns. In the next class, for three-year-old cows in calf, or near calving, the premium for the three best cows in milk was awarded to Mr. Martin. The two-year-old queys in milk or calf were below the average. The first prize was awarded to Messrs. Turnbull, Bonhill Place. There were six entries for aged bulls. Mr. McFarlane, Torr, was placed first with a brown-and-white bull of great substance. The second prize was awarded to Mr. Leckie, Gooseholm; while the third honours went to Mrs. Mather, Crossleith. In the two-year-old bulls Mr. Snodgrass secured the first award. Mr. Howie, Middleton, stood second, with a brown-and-white bull. The third prize was won by Mr. McLachan with a small, lively, dark-brown bull of great symmetry. The yearling bulls were a very good class, as were also the two-year-old heifers. The show of horses was capital. The four brood mares competing for first honours would have held their places at larger shows. The three prizes given were accorded to Mr. Yuille, of Darleith. The blackfaced sheep were a numerous show, but they were lean in condition. There were very few Leicesters, the yearling tup which was awarded the prize belonging to Mr. P. Lennox, Kirkton. The judges were—Cattle and Horses: J. McAdam, Blairrow, Drymen; G. Pendar, Dumbreck, Kilsyth; J. Pollock, Raws, Kilmarnock. Sheep: B. Begg, Blarnyle, Luss; and A. Jardine, Fintry.

THE HIGHLAND AND AGRICULTURAL SOCIETY.

The monthly meeting of the directors of this Society was held in Edinburgh. Mr. Russell (Pilmuir), occupied the chair. The half-yearly general meeting of the Society was fixed for Wednesday June 22nd.

Mr. F. N. Menzies was instructed to visit Dumfries, with a view to making arrangements for the erection of the showyard; to secure the accommodation required for the deputation of directors, judges, &c.; and to ascertain whether suitable parties can be found in the district to undertake the refreshment rooms.

The Committee of Superintendence was appointed.

Mr. MENZIES reported as to the show of 1871, that he had attended the county meeting at Perth on Saturday, when the subject of the auxiliary subscription was brought forward, and a voluntary assessment proposed. All assessments in the county being laid on at the Michaelmas meeting, the matter was delayed. He also reported a letter from Mr. Young of Cleish, convener of the county of Kinross, to the same effect; and stated that he understood that the counties of Forfar and Fife would also give the Society the usual support.

The report of the annual examination of the students attending the Edinburgh Veterinary College was submitted. Out of thirty-six candidates who presented themselves for the Society's veterinary diploma, thirty-one were successful. The usual silver medals given by the Society were awarded to those students who passed the best examinations in the various departments.

The reports lodged in competition for premiums offered for the reclamation of waste land by tillage, and on the improvement of natural pasture without tillage, were remitted to a committee to read and report on their merits before the general meeting in June.

A letter was read from Mr. G. St. Clair Stevenson, the secretary acting consul for France, stating the intention of his Government of holding an international show at Lille (departement du Nord), from the 18th to the 26th of June, 1870. Mr. Stevenson forwards some copies of the regulations for admission to the show, which comprise—1st, agricultural instruments, machinery; 2nd, agricultural produce and matters applied to the culture; 3rd, horses.

Mr. MENZIES laid before the meeting a pamphlet, entitled "Suggestions for Increasing the Supply of Spring Water at Malta, and Improving its Climate," by David Milne Home, LL.D., chairman of the Council of the Scottish Meteorological Society.

THE GAME LAWS.

At the adjourned discussion of the East Suffolk Chamber of Agriculture, Mr. M. Biddell in the chair.

Mr. Everitt re-opened the proceedings in a lengthy speech, and he was followed by Messrs. W. Kersey, T. Hawkins, R. Haward, N. Garrett, and others.

The CHAIRMAN then proceeded to take a show of hands on the various resolutions. The first was No. 1 of Mr. Garrett's:

"That the present game laws are injurious to the best interests of landlords, tenant-farmers, and the country at large; and that their influence is demoralizing to all classes."

To this Mr. Deck moved an amendment—

"That the over-preservation of game is injurious to the best interests of the landlords, tenant-farmers, and country at large."

On a show of hands the amendment was carried unanimously.

Mr. Garrett's second resolution was—

"That the game laws add greatly to the heavy rates, the payment of which is yearly becoming more irksome and distasteful to the whole community, and to the judicious reduction of which each government in its turn professes to accord its most hearty approbation."

To this Mr. Deck's amendment was—

"That all lands and hereditaments should be assessed at their proper lettable value."

The amendment was carried unanimously.

The next resolution of Mr. Garrett's was—

"That hares and rabbits ought to be excluded from the operations of the game laws; that their preservation, being incompatible with good farming, is contrary to the public good, and that, therefore, all contracts, having for their object the preservation of hares and rabbits, ought to be declared illegal."

The resolution was lost by a narrow majority.

Mr. Garrett withdrew his fourth resolution, and his fifth, which ran thus—"That this Chamber of Agriculture is unanimous in hoping that the hon. members for East Suffolk will use their influence both in the House of Commons and out of it for the thorough investigation and for the reform of these laws," was carried.

Mr. Everett's motion, "That this chamber desires to see game efficiently protected from poachers, and as far as practicable by the same means as are used for the protection of ordinary property," which was seconded by Mr. Hawkins, was carried, as was Mr. Everett's further motion, "That in all cases where the tenant cedes the right to game to his landlord he should be compensated—otherwise than by rent—for all injuries which the excessive preservation of game may cause."

ENGLISH TENANT RIGHT.—The paper on "English Tenant," which is given in another page, was received by the Farmers' Club on Monday evening with much applause. Mr. Corbet is familiar with the subject in all its local variety of details, and did well to select the Lincolnshire system as a practical illustration of the question.—*The Gardener's Chronicle and Agricultural Gazette*, May 7. The introduction of the Irish Land Bill has drawn more general attention to the rights of tenants and the duties of landlords in England than the subject has hitherto received; and the paper lately read by the Secretary of the Central Farmers' Club before that Society has embodied what seems to be the fair view of this vexed question.—*The Field*, May 7.

A SUGGESTIVE FACT.—It will be seen from our report that at the meeting of the Farmers' Club Mr. Leamon attempted to make an attack on this Journal, when he was at once stopped by the Chairman. A distinguished Norfolk agriculturist has recently forwarded to us a circular letter addressed to him, asking support for another agricultural journal, so that "fuller reports may be given," and so forth. This circular is signed Robert Leamon, who in a postscript would be much obliged by your "forwarding me your name as a subscriber." Is this the same Mr. Leamon who was stopped by the Chairman at the Farmers' Club on Monday?—*Mark Lane Express*.

ANOTHER SIGNIFICANT FACT.—At the last monthly meeting of the members of the North of England Chamber of Agriculture, at Newcastle-on-Tyne, Mr. Bell, of Hedley Hall, in the chair, Mr. Lawson, of Longhirst, moved that "The mixed Council of the Central Chamber might now be beneficially transformed into an Association, constituted solely of delegated members from the Provincial Chambers;" and this motion was carried unanimously. *The Sussex Express*, in reporting a meeting of the West Kent Chamber, "thinks it right to state in reference to the Central Chamber, that gentlemen subscribing a guinea can attend and vote, and are thus in a position to swamp those who represent the tenant-farmers elected by the country Chambers."

DEATH OF MR. THOMAS TWITCHELL, OF WILLINGTON.—It is with regret we announce that a well-known agriculturist, Mr. Thomas Twitchell, of Willington, Bedfordshire, died on Friday, April 25. Mr. Twitchell was in the prime of life, about 48 years of age; he had been in his usual health until a fortnight ago, when he was seized with apoplexy, and never spoke afterwards. The deceased gentleman was a member of the Council of the Smithfield Club, at the shows of which he had often acted as a judge. He learned farming under that eminent agriculturist, the late Samuel Bennett, of Bickering's Park, with whom he lived many years, and from whom he acquired a taste for well-bred stock, particularly Leicester sheep, of which breed he was for many years the most successful exhibitor at the Smithfield Club shows. Mr. Twitchell was regarded by his brother tenants upon the Duke of Bedford's estate as one of the very best farmers in that highly cultivated county; in the management of sheep he has for 25 years past been looked upon as an authority. The deceased was a director of Bedfordshire Middle-class School, founded for the education of the sons of farmers; and last year the Bedfordshire Agricultural Society did him the honour of appointing him its vice-president. Being a public-spirited, wealthy, and liberal man, he was held in high respect, and his premature death will be universally regretted. The deceased has left a widow, but no family.

CALENDAR OF AGRICULTURE.

This month introduces the general sowing of turnips over the kingdom, except in the eastern counties, where a later season is less exposed to the fly, and less liable to the mildew of the plants. Sow seeds till the 12th of the month, then use the green rounds, or any semi-round varieties, and finish with globes and the red tankards. These and similar sorts will afford a succession of quality for use.

The land having been thoroughly pulverized by repeated workings by the plough, the harrow, and the roll, and all weeds and stones removed by hand-picking, a straight furrow is drawn on the level surface by the common plough provided with a main tree of five feet in length to allow the horses to walk widely apart. The plough returns in the same furrow, throwing a width in the opposite direction, the horses walking one on each side of the first furrow at the extremity of the five feet main tree. The plough moves in succession up and down the sides of the last furrows at the distance of 28 inches, making a drill with each passage with a deep furrow of soil, and thrown widely as possible. This method forms a drill by a single furrow of the plough on the turnip lands of the finest alluvium; in other cases, of more harsh soils, that are cloddy and crumbling, the drills are made by a "boat" of the plough, or by the implement passing twice in the same furrow and thus moving the land into a degree of pulverization, and raising a greater freshness. The farm-yard dung in a semi-putrescent condition, from a heap in the corner of the field, is placed in heaps in the middle hollow of three drills, and is immediately spread along the hollows of the drills by handforks, and must cover the bottoms evenly with dung without any bare spots left uncovered. One person manages each drill in spreading the dung, which is supplied to afford a constancy of work. The time will soon arrive when the dung will be brought from the homestead by light carriages on moveable railways, and in a fresh condition of solid and urinary pieces mixed with the litter of straws cut short by the steam thrashing machinery. Ploughs in succession split the ridglets of land to cover the dung, the right hand horse walking in the last made hollow, and the left hand animal on the top of the drill next the one to be split, of which the largest half is thrown over the dung on the right hand. The plough returns, moving in the central hole, one of two drills, throwing a furrow of fresh soil over the dung from the opposite side of the first split. The dung being covered by two furrows of fresh soil from opposite sides, deeply done as possible, the turnip seeds are sown as the work is done by double drill machine, and the drills rolled by a weight of 5 or 6 cwt. of cast-iron, according as the season is dry or moist with showers. The large arrangement of two ploughs opening the drills with one furrow, five or six one-horse carts bringing forward the dung—a man pulling the dung from the carts into heaps—three persons spreading three drills of dung with a superintendent, three ploughs covering the dung with two furrows over a drill, with a sowing machine drawn by a horse and guided by a man, will finish nine or ten acres in a day of ten hours, provided the arrangement be duly combined and upheld in all its parts. The system can be modified and reduced for any extent of land, when the performance will be proportionally more lax and reduced than in the combined bodies of execution.

Another mode of sowing turnips in drills employs a double mould-board plough with a two-winged share,

which opens and covers a drill with one furrow passing up and down on one side, and splitting the ridglet over the dung in half to each side. The point of the two-winged share is unable to penetrate any hardness of ground, slides along the under stratum as on flagstones, and in making the drills the mould-boards push together the surface of the dry and scorched alluvium from the operations of working, in which the seeds do not readily vegetate. The narrow-pointed share of the common plough will penetrate to any depth, and raises fresh soil in every movement of forming the drills, and in covering the dung with two-furrows, though sometimes done with one in cases of very fine lands in moist seasons. This advantage gives the superiority to the common plough in penetrating the ground and raising a fresh tilth, in which the seeds will vegetate over the dung. The value is inestimable of moisture and freshness for the growth of young turnips.

These two modes of sowing turnips have been contrived and very steadily practised on the fine turnip soils of North Britain, which are wholly composed of fresh-water alluvium over the primitive and secondary rocks with interruptions of the igneous formations. The intervening beds are all of the fresh-water kinds, in clays and gravels. These lands occupy the whole of Scotland, with about one-third part of England, forming a most favourable cultivation of the turnip, along with a climate of which the peculiar frigidity permits the formation of heavy dews, and where the hills and mountains attract the clouds for the discharge of frequent and abundant rains. In these countries the climate and alluvial soils permit the growth of turnips in a very high degree, and exhibit the cultivation of the plant in the largest extent of mixed farming.

Southward from the Humber and the Mersey an entirely different constitution begins, both of soil and climate; the marine formations of clays and sands commence the formation of the surface ground, and the climate gradually changes into a dry aridity rather than of violent heats, and forming by its continuance a heavy obstacle to the cultivation of turnips along with soils of clays, sands, and chalks too nearly allied to, and not far enough removed from, the parent sterility of the marine constitution.

Under these circumstances, the twice drilling of the land in the driest time of the year exposes the soil too much to evaporation, or the escape of moisture, and accordingly it is more advantageous to sow the turnips on the flat ground that has been wrought into the usual pulverization, dunged over the surface in broadcast spreading, and ploughed under with one furrow into convenient breadths of ground. The straws of litter having been cut into short lengths by the steam-thrashing machinery, as is often recommended, will place the farm-yard dung in a condition that will very much facilitate the covering in the land and prevent the catching of any straw by the coulters of the sowing machine. The land levelled by a light harrowing, the seeds are sown by a machine with two coulters, which penetrate the ground into ruts to receive any auxiliary manures along with the seeds. A bush-harrowing, and a rolling in dry seasons finishes the process. The common corn drill will answer the purpose, by using the coulters of the proper width.

The sowing of turnips in rows on the flat ground or in broadcast better secures the moisture than by drilling,

and very especially in the case of cloddy, crumbling soils of arid viscous clays. With the scorching sands of the southern counties, a very strong objection is found in the want of the convenience of destroying the weeds and fallowing the land in the intervals without damage to the young plants. The horse-hoe wants the freedom for its work, by going deeply into the ground, the earth is thrown over the plants, and in the wet seasons of a profusion of weeds the accumulation of rubbish becomes higher in the intervals than the growing plants, causing much damage and inconvenience, and if the cultivation be wholly confined to the light operations of the hand-hoe the process will be most imperfect and wanting in effect. In hollow intervals of the ridglet system the loose and the weeds are fallowed wholly apart from the young plants, causing no disturbance, and forming a very chief part of the benefit from the turnip crop.

Where auxiliary or artificial manures, or bones and guano, with mixtures of mechanical composition are used singly to raise a crop of turnips, it may be suggested to form drills by a single furrow of the common plough 28 inches apart, and deeply and widely done. The manure and seeds in mixture are deposited by the coulters of double drill machine, splitting the drills deeply into ruts, which are closed and pressed by roll into a level surface as before being raised into ridglets. In this way the turnips will grow on the flat ground, and derive the benefit of a fresh tilth raised by moving the ground in which the seeds will germinate and repose.

The retention of the winter moisture in the land for the use of the turnip season is the grand consideration of turnip farming—to obtain a crop of vegetables so truly valuable, not only in itself as food for animals and the produce of dung, but for the benefits arising from its growth by the tap root piercing and dividing the ground, by the leaves shading the ground to retain moisture and prevent waste, and by the exudations from the fleshy bulbous root.

Plough with a shallow furrow the parched and burned lands on which the ashes have been spread, harrow the surface into a fine tilth, sow the turnip seed by hand in broadcast, about the end of the month, and cover by a light harrowing, and with a rolling on rough grounds. Deep and loamy lands are wrought into pulverization by the common processes of plough and harrow, and formed into drills and sown with seeds. Clay lands are sown with one furrow of ploughing. Plough the intervals of the drills, horse and hand-hoe potatoes, beet, carrots, and parsnips. Plough potatoes deeply, especially on stiff soils, with the miniature plough drawn by one horse, the best scarifier yet found.

Shear sheep and mark by distinctive signs the different ages and condition of the animals. Wean the lambs of the year, and place them on the best pastures, and be-

yond the reach of the ewes. Put mares to the stallions regularly.

Cut and destroy all weeds on pastures; pull any tall weeds among grain crops, and destroy all weeds on the sides of roads, ditches, and hedges. Many seeds are winged, and are carried by the wind to a distance, and propagate very rapidly.

Continue the feeding in the yards of horses and cows with clovers and vetches, in ample quantity, with a sufficient littering of wheat straw, and convey to the tank any excess of moisture. Manure equal to the dung of winter can be made throughout the summer by forming the bottoms of the yards into a shallow basin, and giving the animals an abundant supply of green meat, with frequent littering of short straws, cut as has been recommended, thinly and regularly over the area in alternation with the solid faeces, and the surface of the yard kept level with mixtures of the wet and dry materials in a regular condition.

In the last half of the month the meadows of natural grasses will be mown for hay, and are best cut when the plants are in full bloom, as the saccharine juice is at that time most abundant in the herbage. Ted the grass by spreading the swathes quickly behind the mowers, each of which will require six hands for making the hay. Place the grass in small cocks at night, spread it out thinly in the morning, cock and spread it again during two or three sunny days, and carry it to the rick at the homestead. In gloomy weather more days will be required. Place the dried herbage lightly on the rick to be consolidated by its own weight by daily additions from the field, and if rain threatens a tarpaulin cloth can be raised on posts to slope to the sides, and raised above the rick to escape the gaseous sweating of the herbage. When the round rick or oblong stack is finished, the top and sides can be pulled and dressed into any shape that is desired.

In early localities the cutting for hay of artificial grasses will commence in the end of the month, when the herbage is repeatedly turned over in the swathes without being thinly spread abroad, as the handling tends to shake off the leaves of the clover, which are the best parts of the plants, turning over the grass instead of tedding. The cocks are used as for natural grasses, and the carrying of the crop and the stacking of it are done as has been described.

Tedding machines are used with a good purpose in the case of large extent of natural meadows of which the herbage is light and of easy management, but the heavy herbage of clovers and of similar plants impedes the action of the machine, and the shaking motion of the implement tends to shake off the leaves, as has been objected to the tedding of the herbage.

CALENDAR OF GARDENING.

KITCHEN GARDEN.

In the first part of the month sow peas of the second early varieties, as Veitch's Perfection and Ne Plus Ultra, and in the latter part of the month introduce the tall growers, as Abergavenny, Waterloo, and Victoria Marrows, which will produce largely for weeks. Dig the ground deeply; manure with moist vegetable compost six inches under the seed drills; soak the soil over that; make the drills three inches deep; sow the seed, water it, return the covering earth, and put it down. By this treatment, with waterings in the lower ground on each side of the ridge, peas will succeed in the driest summers. Peas sown late rarely escape mildew.

Sow carrots for drawing young and for standing the winter.

Repeat the sowing about the close of the month with onions for drawing or standing, and small salads, lettuces, and a few turnips.

Sow kidney beans and runners at least twice, as a succession with round spinach every week or ten days.

Sow cabbage. The early quick growers to come in speedily for summer and autumn. Aithkens' Matchless and Hill's Dwarf are suitable varieties.

In the fourth week of the month sow again Dutch turnips for autumn, and salads and lettuce.

About the middle of the month transplant Cape

broccoli, cauliflower for August, making the ground rich with compost. Also transplant borecole, Scotch kale, asparagus, and Brussels sprouts.

Stick and earth up peas. Hoe between crops.

Plant out cucumbers and vegetable marrows: Moore's Vegetable Cream, as now called.

Asparagus beds still yield, but should not be cut beyond the 10th. Beds and row are mutilated by too close cutting; one shoot should always be left untouched to each crown. Scatter rich earth with droppings over the beds, but avoid salt, as any particle falling on a wet leaf will decompose the tissue, and the plant dies; better to mix two ounces of salt in a bushel of compost, and it will be washed into the ground.

Plant young lemon thyme, savory, sweet marjoram, basil, and also slips of lavender, rosemary, rue, and other handy sweet herbs in cool, shady beds, for subsequent transplantation.

Cut the aromatic herbs for drying, when they begin to flower.

Thin out onions by degrees for use, leaving the bulbing stock from four to six inches asunder. If the weather be very dry frequent light hoeings to prevent the surface from cracking will also cause the attraction of moisture and bring on the plants.

Cut all tall leafy and succulent weeds into short lengths to fill the liquid tank, and with grass earths from sides of roads and ditches, along with vegetable matters of all kinds. The urinary and soapy liquids of the dwelling house, placed in the tank, will be imbibed by the earthy mixtures, which must be applied in quantity to form a saponaceous mass of a consistency to be handled by the spade without any liquid droppings. This preparation affords a manure for the stronger vegetables, as cabbages and beet, and is applied in a fresh state without any fermentation. Vegetable substances surcharged with liquids are the best application of both bodies yet known.

The scrapings of roads, the droppings of animals with all kinds of fine earths makes every good compost along with a mixture of effete lime, for the purpose already mentioned of the lighter vegetable crops and for flower-beds. An ample supply of both kinds of manure must be provided for the garden. The expense is small, requires some attention, and is essential to any cultivation of land.

FRUIT DEPARTMENT.

The dwarf and espalier trees, the apple and pear, may have produced many young shoots; the ill-placed ought to be removed to the bottom, the others should be left for a month longer. Many persons foreshorten yearly and repeat the operation, but it may be preferable to wait till near the close of the summer growth. Lay in the best shoots of cherry and plum trees upon walls.

In dry weather water strawberry beds and rows daily, if possible, being the only security. Rows should be stringed on each side, the twine fastened to the short sticks so as to support the entire ranks of trusses. Net over the ripening fruit if small birds, particularly black-birds abound.

Cucumbers in frames must be always stopped at a fruit. Melons first, at the second or third joint, to secure side laterals, and then as fruit appears, but not so rigidly as cucumbers, taking care to impregnate the fruitful flowers.

FLOWER GARDEN.

Arrange any green-house plants now brought out in a neat order under some fence facing the north. Place flowering shrubs, and also herbaceous plants in situations where the sizes may graduate from low ones in front to high ones at back; attend to order in displacing the colours whenever the collection is miscellaneous.

At the end of the month pipe and layer pinks, cloves, carnations and picotees; succeed last by layers alit carefully through two joints, pegged down an inch deep with fern pegs, and covered with sifted earth containing one-third of chalk or lime rubbish from old mortar, one-third of sharp sand, and the same of old dung.

Attend to any beds of geraniums, verbenas, &c., to keep all free from weeds, dead leaves, and every unsightly object. Earwigs are best destroyed by pots with hay or tow in them, inverted upon sticks a foot or more high.

Raise bulbs of tulip, narcissus, hyacinth, and other plants of that order when the green parts change colour and become dry. Dry the bulbs in the air.

Routine culture consists in hoeing, raking, cleaning, and sweeping walks and lawns, with the removal of all litter to manure compost grounds, where every jot of vegetable matter if deposited in a sunk excavation or liquid pit, and watered as is constantly directed with soapy and urinary liquids, will soon be converted into a most useful manure.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR MAY.

Owing to the heavy depletion of the stock of foreign grain on hand, and the inroads made on the quantity of English wheat in the hands of farmers, there was considerable firmness in the grain trade at the opening of the month, and the quotations had an upward tendency. This movement was strengthened by the fact that the accounts received from abroad were not uniformly satisfactory, while our own crop was decidedly backward. The reopening of the navigation has been followed by the resumption of shipments; and a considerable addition has been made to the quantity of wheat on passage. Nevertheless, the proportion of really choice wheat on hand is small, the arrivals from the Baltic having been limited. During the last week, however, our receipts from that quarter have been more limited. The supplies of grain, on sale, have been small throughout the month, but fully adequate to the demand, as millers have

adhered to the cautious policy which has characterised their dealings for some time past, and have operated only as necessity demanded. The produce which has changed hands has, therefore, gone direct into consumption, and millers' stocks are still very low. With the return of genial forcing weather, the wheat trade became very inanimate, and prices tended unmistakably downwards. After a few refreshing rains, not so general as could have been desired; we experienced a spell of brilliant sunshine and fine open weather, by which the wheat plant greatly profited. Much progress has been made accordingly, but the plant is still backward for the time of year. The course of prices will now be chiefly regulated by the accounts received of the growing crops, both here and abroad, and there appears to be little to fear under this head at present.

Spring corn has ruled fair throughout the month, and good feeding stuffs have been rather dearer. The supplies coming forwards have not been heavy, so there has been a steady in-

quiry for both maize and oats. Annexed is our usual table of imports of grain, &c., into the United Kingdom :

FOR THE WEEK ENDED MAY 21.

	Imports.	Exports.	Imports.	Exports.
	Cwt.	Cwt.	Cwt.	Cwt.
Wheat	485,520	6,071	355,876	—
Barley	106,089	—	60,586	3
Oats	175,900	1,491	75,403	6,952
Peas	54,810	606	4,207	32
Beans	37,329	—	26,093	—
Indian Corn ..	154,813	—	195,973	45
Flour	96,670	875	24,498	825

SINCE SEPTEMBER 1.

	1869-70.	1868-9.
Wheat	29,955,924	20,432,949
Barley	6,067,566	8,112,543
Oats	7,280,778	4,462,899
Peas	1,045,773	881,560
Beans	1,367,402	2,028,371
Indian Corn ..	13,572,244	9,952,147
Flour	4,687,333	2,885,771

Potatoes are turning out fairly well, but would derive much benefit from more moisture, if that were forthcoming; which remark applies to the root crops generally. At the same time, considering the little rain that has fallen, roots have done well. Hay and clover continue to come freely to hand at the metropolitan markets, and values have been sustained.

In the hop market there is no feature to notice. Trade has been almost suspended, and prices have been altogether nominal. Some sales of American have been effected at a considerable reduction.

Wool has ruled firm, and the London public sales have passed off very satisfactorily, though just now there is little animation in the English wool market, owing to the appearance of the new clip.

REVIEW OF THE CATTLE TRADE DURING THE MONTH OF MAY.

Devoid of any feature of importance, the cattle trade during the month has been in a quiet state. The warm weather has engendered much caution on the part of butchers in concluding transactions, owing to the difficulty of disposing of the stock after slaughtering. Any permanent reduction in prices, however, has been prevented by the falling-off in the receipts. The quality of the beasts has continued quite equal to the average; but the scarcity of grass in the pastures, the result of the recent drought, augurs ill for the condition of future receipts, as it will necessitate a strong inquiry for feeding stuffs. From our own grazing districts, the arrivals of stock have been only moderate. From abroad, a fair number has come to hand; but, with the exception of some of the French stock, the quality generally has been indifferent. As regards the demand, there has been an entire absence of briskness, and the fluctuations have been altogether unimportant. At the commencement of the month the best Scots were making 5s. per 8lbs., and, with the exception of a temporary relapse, to 4s. 10d., which has since been recovered; the quotation has been firm thereat throughout.

In respect to sheep, the supply has been tolerably good so far as number is concerned, but the quality has not been prime, really fine English breeds being comparatively scarce. The month opened steadily, at an advance of 2d. to 4d. per 8lbs., the best Downs and half-breeds selling at 5s. 2d. to 5s. 4d. The top price subsequently receded to 5s. 2d. per 8lbs.; but the relapse proved to be quite temporary, as at the close of the month the reduction had been well recovered.

The show of lambs has been good, and the trade has been quiet, at from 6s. 6d. to 7s. 6d. per 8lbs.

Calves have been in moderate supply and fair request, at from 3s. 10d. to 5s. 8d. per 8lbs.

For pigs the demand has been heavy, but prices have been without change, ranging from 4s. 6d. to 5s. 8d. per 8lbs.

The total supplies of stock exhibited and disposed of in the Metropolitan Market have been as under :

Beasts	...	...	...	16,185
Sheep and Lambs	...	...	...	156,085
Calves	...	...	...	2,764
Pigs	...	...	...	380

COMPARISON OF SUPPLIES.

	Beasts.	Sheep and Lambs.	Calves.	Pigs.
May 1869	20,112	164,969	2,056	671
1868	17,810	176,000	2,192	1,350
1867	19,860	160,370	1,709	2,260
1866	16,275	125,490	695	2,185
1865	23,030	129,140	3,199	2,117
1864	23,240	122,210	2,063	3,080
1863	20,444	126,040	2,129	3,120
1862	19,273	132,450	1,527	3,022
1861	19,600	113,750	1,178	2,950
1860	19,040	124,580	2,059	2,920
1859	17,980	113,512	1,012	2,260
1858	18,722	113,886	1,671	2,760
1857	18,741	104,990	1,415	2,530
1856	18,732	119,640	1,280	2,545

The total imports of foreign stock into London during the past month have been as follows :

Beasts	...	...	...	5,600
Sheep and Lambs	...	...	...	26,258
Calves	...	...	...	2,845
Pigs	...	...	...	1,578

Total 36,281

Imports at corresponding periods :

Total in	1869	...	...	64,333
"	1868	...	...	24,627
"	1867	...	...	53,455
"	1866	...	...	43,930
"	1865	...	...	40,739
"	1864	...	...	28,833
"	1863	...	...	22,161
"	1862	...	...	11,206
"	1861	...	...	18,978
"	1860	...	...	18,910
"	1859	...	...	10,713
"	1858	...	...	6,703
"	1857	...	...	7,243
"	1856	...	...	3,556

The arrivals of beasts from our own grazing districts, as well as from Scotland and Ireland, thus compare with the three previous years :

From—	1870.	1869.	1868.	1867.
Norfolk, Suffolk, &c.	6,640	4,530	9,200	7,480
Other parts of England	2,104	2,660	2,200	2,600
Scotland	1,086	663	554	950
Ireland	80	229	426	—

Beasts have sold at from 3s. to 5s., sheep 3s. to 5s. 4d., lambs 6s. 6d. to 7s. 6d., calves 3s. 10d. to 5s. 8d., and pigs 4s. 6d. to 5s. 8d. per 8lbs. to sink the offal.

COMPARISON OF PRICES.

	May, 1866.	May, 1867.
	s. d. s. d.	s. d. s. d.
Beef from	8 10 to 5 2	3 4 to 5 2
Mutton	4 4 to 6 0	3 6 to 5 2
Lamb	6 8 to 9 0	6 6 to 8 0
Veal	5 4 to 6 4	4 4 to 6 0
Pork	4 0 to 5 0	3 0 to 5 4
	May, 1868.	May, 1869.
	s. d. s. d.	s. d. s. d.
Beef from	3 2 to 5 2	3 0 to 5 10
Mutton	3 4 to 5 0	3 0 to 6 0
Lamb	6 6 to 7 4	5 8 to 7 4
Veal	4 4 to 5 4	4 6 to 6 2
Pork	3 4 to 4 4	3 6 to 5 2

The dead-meat markets have been only moderately supplied with meat. The trade has been quiet, on the whole, as follows: Beef from 3s. 2d. to 4s. 8d., mutton 3s. 4d. to 5s. 2d., lamb 5s. 8d. to 6s. 8d., veal 4s. to 4s. 8d., and pork 3s. 8d. to 5s. 8d. per 8lbs. by the carcase.

AGRICULTURAL INTELLIGENCE, FAIRS, &c.

ALYTH WHITSUNDAY MARKET.—There was a numerous display of fat cows and three-year-old bullocks. Of lean one and two-year-olds there was an abundant supply, especially of the former. For all sorts of cattle prices were lower compared to last year's market. On good two-year-olds the reduction averaged £1 10s. to £2; on three-year-olds, about £3 per head. Business opened and continued stiff and slow, with no indications of improvement on the last Glasgow market quotations. The best three and four-year-old bullocks ranged in price from £20 to £23 and £25 per head; do., in forward condition, £16 to £18; fat cows £14 to £16 and £18—some of this class sold at £11 each; fat two-year-olds, £10 to £12; lean two-year-old stots and queys, £7 to £8 10s.; yearlings £2 5s. to £2 15s. and £3 10s. per head. The best beef did not succeed 10s.; second-class 8s. to 9s. per Dutch stone. There was a larger number of sheep than usual, with several lots of ewes with lambs at foot. There was a good inquiry for all classes, and the most of the lots were sold. Greyfaced hogs sold at 13s. to 15s. per head, cross hogs 20s. to 25s. blackfaced ewes, with lambs, 30s. to 35s. Fat English sheep, from 40s. to 42s. per head. Mutton, 7d. to 8½d. per lb.

BEMUDIN FAIR, (Monday last).—The number of sheep and lambs penned were about an average, but they were not quickly sold, sellers asking prices beyond the views of buyers, ultimately some inclination to effect sales was evinced when a fair clearance was made. Tegs were from 26s. to 35s. per head.

BOSTON FAT SHEEP MARKET.—From 7,000 to 8,000 sheep penned to-day. Hogs were in slow demand, at a reduction of from 1s. to 2s. a head on the prices obtained at the fair on the 4th inst. A fair amount of business was done in fat sheep, at 7d. to 7½d. per lb.

BOURN MAY FAIR.—At this fair, held on the 12th instant, there was a slow trade, and only a limited amount of business was done.

BUNGAY FAIR.—This fair, on Monday, was more numerous attended, and the show of stock of all kinds and classes was larger than has been known for many years. The trade progressed very slowly during the earlier part of the day, but as time advanced it became brisker, and we believe that a fair amount of business was transacted at satisfactory prices.

CHERTSEY CATTLE FAIR.—On Saturday there was a thin supply of horned stock at Chertsey, and good steers, heifers, and barreners for grazing out sold at £8 to £14, milch cows £14 to £20, and cows to calve down £9 to £15. The horse show was of inferior character; cart horses fetched 14 to 24 guineas, nags 18 to 25 gs., and light harness horses and cobs 15 to 21 gs. The sheep fair was small and trade dull.

COCKERMOUTH FAIR.—There was a fair show of cattle, and a quick sale was experienced, most of the animals changing hands before mid-day. Three-year-old heifers, £10 to £16; two-year-olds, £10 to £12; yearling bullocks, £6 to £9. Milch and calving cows were scarce, and the prices realized ranged from £17 to £19 and £22 per head. There was only a limited show of Irish cattle, and those on offer sold quickly at good prices—say, from £6 10s. to £10 per head.

DUNFERMLINE MONTHLY MARKET.—The stock was scarcely up to the average, and consisted chiefly of fat and grazing cattle and milk cows. The best class of cattle sold at prices ranging between £15 and £20, or from 10s. to 10s. 6d. per Dutch stone; milk cows brought from £10 to £17; several other milk cows and queys from £9 to £10; two-year-old cattle from £8 to £12 10s.; and one-year-olds from £4 to £8.

FALKIRK MAY FAIR.—This market, which is the largest of those held in the Callander Riggs throughout the year, took place on Thursday, and though the weather proved most unfavourable, there was a good attendance of farmers and dealers from the neighbouring districts, and also a number from a distance. The show of stock was smaller than last year; but it included all the classes generally found at this market. The falling off in quantity is to be attributed to the establishment of the monthly trysts at Stenhousemuir and to local influences. The cattle on offer were of very fair quality, and for the more promising lots of grazing stock there was a good healthy demand, at prices considerably in advance of those current at the

same time last year. Cattle in value of from £7 to £9 would be up £1 a-head, while those giving less money were relatively dearer. The milch cow department was most inactive, and prices were a shade easier than they were a few weeks since. The Irish stock were not easily sold, and some of the lots had no bidders. The supply of horses was limited and of a secondary quality. For the most part the animals were only suited for farm purposes, and the demand was stiff. A good many dealers were present both from Edinburgh and Glasgow, but they were prevented from doing much business by the smallness of the show. Mr. Rennie, Craigburn, Falkirk, quoted horses at from £20 to £25. Ponies sold at from £4 to £7 each.

HANFORD HALL FAIR.—This annual fair, which was held at Ipswich, on Tuesday, attracted, as usual, a goodly number of Essex exhibitors and Essex buyers. The fair was scarcely up to that of last year; and trade, on the whole, could not be called active. In the former part of the day the business done was limited; but in the afternoon sales were pushed, and a fair clearance was effected, at recent prices.

HIGHBRIDGE FORTNIGHTLY MARKET was tolerably well supplied with cows and calves, but the number of fat beasts was limited. Fat sheep and lambs were in fair supply. There was a moderate attendance of dealers. For fat beasts 13s. per score was asked, but little or no business was done. Cows and calves sold at £16 to £18 each. Springers (inferior quality) sold at £10 each. Fat sheep 8d. to 8½d. per lb. Lamb 9d. to 9½d. per lb. Pigs were in good supply, and former prices were sustained.

INVERNESS MONTHLY MARKET.—Generally the stock was of an inferior description, there being almost an entire absence of Highland cattle and strong grazing beasts, which were in good demand. The prices realised were about the same as those current at the Muir of Ord on the previous day, from which the market principally took its tone. The market was considered to be stiff and dull, and several lots were unsold. The following are some of the transactions; cross stirks at £8; two-year-old cross queys from £10 to £12; two-year-old cross stots at £16; cross stirks at £11; cross stirks at £6; Highland stirks at £3 16s.; two-year-old cross heifers at £10 10s.; two-year-old cross stots and heifers at £12; a farrow cross cow at £9, a two-year old cross heifer £8.

LINCOLN FAT STOCK MARKET.—A large show of sheep and beasts. Mutton a ready sale at about 7½d. per lb., and beef sold at 9s. per stone. The greater part were sold by auction. Messrs. Tate and Richardson sold 445 sheep and 12 beasts.

NEWARK MAY FAIR.—This fair was held on Saturday last. The show of cattle was satisfactory, though not what could be termed a very large one. Two years old steers realised £10 to £12, three years old steers £14 to £18, two years old heifers £10 to £14, three years old heifers £14 to £20, milch cows £16 to £18, superior class £20 to £23. Only 1,024 sheep were penned. Grazing hogs 50s. to 57s., ewes with single lambs 10s. more. The horse fair was not extensive, but all animals of good quality were readily sold at good prices. Cart horses £40 to £60, light harness £30 to £40, cobs £25 to £30 each.

PENISTONE FAIR.—There was a good supply, principally milch, in-calf cows, barren heifers, stirks, and Irish. There was a large attendance of farmers and dealers from Sheffield, Barnsley, Huddersfield, and also from Derbyshire. A fair trade was done in milch cows at from £18 to £22, heifers £16 to £18, and stirks, from one to two years old, at £6 to £10. Barren stock were offered at £14 to £15 per head. There was a good show of sheep and lambs; sheep at 30s. to 40s., and lambs may be quoted at late rates. The trade in calves was brisk, and the highest quotations of this day week were fully realized. The pig pens were quite full, and there was a good inquiry, sales being effected at previous rates.

SALISBURY FORTNIGHTLY MARKET.—Although there was not a very large number of beasts, the supply included many good and useful descriptions. The best made late rates, but trade ruled dull, and a general clearance was not effected. In the sheep department some excellent qualities were penned, but the demand was quiet and prices easier, the whole not meeting with purchasers. Best oxen realised 12s. to 13s. per score, and heifers from 11s. to 12s. Cows, with their calves, from £10 to £18. Best wether mutton made from 7d. to 8d., ewe ditto from 6½d. per lb. out of the wool,

REVIEW OF THE CORN TRADE DURING THE PAST MONTH.

The fall of rain in the month of May has not nearly made up for the deficiencies of April, and its commencement was more like March than itself, there being frequent and severe frosts at night which cut off many pieces of potatoes, as well as nipping and delaying vegetation generally. But after a fortnight had thus passed, we had a sudden outburst of sultry weather, which had it only been attended with showers, would have done much to make up for the lateness and delay. As it is Nature has been freshened, the foliage has thoroughly expanded, the fruit buds which escaped the frost will have had an opportunity to set and rapidly form, and our general prospects have greatly improved. But the grass, though green, has made little growth. The pulse and oats, as well as barley, are all short in the haulm or straw, and without the needed supply the crops of all spring corn must be small. The wheat has, however, greatly improved and may yet produce an average yield, though, after a few days of great heat, the return of the east wind again brought cold with it. The ungenial aspect of the commencement of the month, the regularly small supplies to the London market, with much less foreign arrived than expected, and much more delivered from granary than contemplated, have somewhat changed the aspect of the wheat trade, as shown by a comparison of the London averages, which note a positive gain of 5s. 7d., though some, foreboding evil to the farming interest, predicted a certain and speedy decline of 2s. Such gloomy prophecies being often suicidal to their authors—we are by no means disposed to return a verdict of "felo de se," but rather would put them down charitably to an insufficient acquaintance with the corn trade, or to mental delusion. But while the London averages very fairly represent the rise that has taken place, it must be remembered that the returns are made about a fortnight after the sales, and so we cannot report as much for the open market rise of the month. Indeed the last two Mondays hung fire, as the consequence of the change in the weather, and some of the advance was lost. But France has very well maintained the rise, and so scanty have been the supplies hitherto at the Baltic ports, and so active the general and consumptive demand there, that no foreign port has evinced any sort of depression, and our last week's supplies, which consisted of two-thirds American and were but moderate as a whole, proved previous reports to be correct. We would now simply suggest the following questions as to the probability of any serious decline from present rates. Have not our weekly sales in the country been much larger than they were last year? Must these not have greatly reduced farmers' stocks? Have not our granaries been still more freely relieved? Is not our consumption rapidly increasing? Are not our future supplies mainly dependant on America and the Black Sea, and are not France, Belgium, and Holland likely to be our competitors in the receipt of these shipments? And, further, does our own growing crop warrant sales at unremunerating rates? The prices quoted below were those of the places noted by last accounts. White wheat at Paris 52s. 6d., red to 50s.; red in Belgium 48s. to 51s.; weak white Zealand wheat at Rotterdam 46s.; Polish at Amsterdam 52s.; new white at Danzig 48s.; wheat at Hambro' 46s. 3d. to 47s. 9d.; red at Stettin 42s. to 44s.; wheat at Porrentruy, Switzerland, 46s.; Ghirkaat Taganroc 42s. per qr., cost, freight, and insurance included; soft

wheat at Genoa 51s.; at San Francisco 47s. 6d. to Liverpool, cost, freight, and insurance included; No. 2 spring wheat at New York 39s. per 480lbs. free on board.

The first Monday in Mark Lane opened in moderate supplies of wheat both English and foreign. The show of samples during the morning from Kent and Essex was short, and factors were enabled to realise an advance of 1s. to 2s. per qr., though it was not very freely paid by millers. There was a good demand for American at an improvement of 2s. per qr., and other descriptions moved off slowly at an advance of 1s. Quite one shilling more was paid in floating cargoes also. The country markets this week very readily responded to the London reports. The smallest advance noted anywhere was as much as 1s. per qr., more were up 1s. to 2s., and the following places quoted a rise of fully 2s.: viz., Boston, Gainsboro', Gloucester, Lynn, Louth, Newcastle, Sleaford, and Stockton. Liverpool, however, only noted an upward movement of 1d. to 2d. per cental on Tuesday which was confirmed on Friday. In Scotland there was also some advance, Glasgow being 6d. to 9d. per boll higher, and Edinburgh was up 2s. per qr. Native wheat at Dublin brought 6d. per barrel more money, but no advance could be realised on foreign samples.

On the second Monday the English supply of wheat was moderate, with a good increase in the foreign arrivals. The show of samples during the morning from the near counties was unusually short, and with cold ungenial weather factors endeavoured to obtain 1s. above the rates of the previous week, but to this millers declined to submit, and prices were unaltered. The foreign trade was on a small scale, the demand being only retail, but factors were very firm and the prices paid rather above the previous week in some cases. Floating cargoes were without change of value, though the arrivals were but few. This week there was more quiet in the country, and quotations generally were the same as on the week previous, but at some places there was a further rise of 1s., as at Birmingham, Boston, Sheffield, Sleaford, and Wolverhampton. At Liverpool the gain for the week was only 2d. to 3d. per cental. Wheat in Scotland was only firm, without much passing. Dublin also was quiet and unaltered both for native qualities and foreign.

On the third Monday's market there was less than the average quantity of home growth, with some reduction in the foreign supply, though it was still good. There was another very limited display of fresh samples from Essex and Kent, but the weather having been more favourable, with some fine showers, buyers were disinclined to operate without obtaining some concession on the previous rates. The offers of 1s. per qr. less were, however, declined, and millers remaining firm scarcely any business was done. The activity too of the foreign trade was entirely lost, and to have made any sales, especially of red American, fully 1s. reduction must have been conceded, and indeed it was much the same with other qualities. The floating trade too felt the change in the weather, and though arrivals were limited almost nothing was done, holders only asking previous rates. With a summer-like temperature in the country and the dull report from town the markets could hardly fail to show some reaction in prices, and the universal tendency this week was moderately towards decline, several places

quoting a reduction of 1s. per qr. Among these were Lynn, Birmingham, Bristol, Wolverhampton, Worcester, Chelmsford, Bury St. Edmunds, Rotherham, and Stockton. Newark and Norwich noted a reduction of 1s. to 2s., and Liverpool was 1d. to 2d. cheaper per cental on Tuesday, and as much also on Friday. The Scotch markets showed the same tendency, Edinburgh and Glasgow being down 1s. per qr. Irish wheat at Dublin was rather lower, and foreign difficult to sell on former terms.

On the fourth Monday the supply of English wheat was small, the foreign being liberal from New York, but scanty from European ports, with a change to east wind and much colder weather. Factors on a small supply from the near counties were asking the previous rates, but as part of the show was made up of the overleft samples of the previous week millers would not buy, unless at a decline of 1s. per qr. from the nominal rates of the former Monday. With a good supply of American red this sort was fully 1s. per qr. down as well as all the lower descriptions of foreign, but fine Baltic from its scarcity was quite as dear, though but little inquired for. Floating cargoes were 1s. to 2s. lower.

The imports into London for four weeks were 21,775 qrs. English, 76,375 qrs. foreign, against 22,573 qrs. English, 61,071 qrs. foreign for the same period in 1869. London exports 5,655 qrs., consisting of low qualities. The imports into the United Kingdom for four weeks ending May 14 were 2,011,562 cwt. wheat, 374,629 cwt. flour, against 1,784,987 cwt. wheat, 228,965 cwt. flour for the same period in 1869. The general averages commenced at 42s. 7d. and closed at 44s. 5d., those of London commenced at 45s. 1d. and ended at 50s. 8d. per qr. The general improvement would therefore appear only 1s. 10d. per qr., while in London it was 5s. 7d.

With good supplies of country flour and fair arrivals of foreign in barrels the trade has generally been steady, with but slight variations. On the first Monday town millers raised their top price from 40s. to 43s., at which it has since stood. The only difference in the value of country made samples being 1s. per sack in sellers' favour, while barrels gaining 6d. on the first Monday and losing it on the last have left rates unaltered, say to 22s. for extra state, and choice about 23s., or according to superior excellence. The imports into London for four weeks were 88,610 sacks English, 2,777 sacks 30,059 barrels foreign, against 96,470 sacks English, 8,829 sacks 100 barrels for the same period in 1869.

The supply of English barley through the month has been very limited from the apparent exhaustion of stocks in the country, and the foreign arrivals have been quite on a small scale. The malting season being virtually over, the demand has been quite exceptional, and prices little more than nominal, though there has been no quotable reduction; foreign, on the contrary, has somewhat improved in value, the little French coming to hand having been used for malting at fully 1s. per qr. more money from the deficiency of the English supplies, and grinding sorts have also increased in value from 6d. to 1s., being worth from 23s. to 26s. per qr. The imports during four weeks were 2,371 qrs. British, 25,602 qrs. foreign, against 2,926 qrs. British, 9,823 qrs. foreign, for the same period last year. The want of rain is calculated still further to harden values, more especially as maize has lately been advancing.

The malt trade has been very limited, all through the month, but prices have kept nominally at the previous range.

The very short supply of maize all through the month has increased its value 1s. 6d. to 2s. per qr., as nothing comes from America, nor is likely to come. The value at New York is 37s., while in London its extreme price for

white sorts is about 32s., or 31s. for yellow. As a substantial food, and substitute for oats, barley, and beans, all of which are getting in very short supply from British sources, we think this grain more likely further to improve than decline, though much is coming from the Mediterranean and Black Sea.

Notwithstanding heavy supplies of foreign oats, this grain has about maintained its value, as nothing has come from Scotland or Ireland this month, and the average weekly returns of English have barely reached 900 qrs. The great want of rain has kept up a good demand; and though prices have much improved from the lowest point, they are still moderate, after the partial failure of our own crop and the large weekly consumption of London. 38lbs. per bushel fresh Swedish corn has been only bringing 19s. 3d. to 20s. per qr., and fine sweet Russian of the like weight about the same; while the drought in France has raised prices at Paris to 24s.; so, should rain still be wanting, rates are capable of a further increase. The imports in four weeks into London have been 8,598 qrs., English 189,026 qrs. foreign, against 1,847 qrs. English, 21 qrs. Scotch, 2,500 qrs. Irish, 93,231 qrs. foreign, in 1869. Our foreign imports, therefore, are double what they were a year ago.

The supply of Linseed for a month has scarcely exceeded an ordinary week, and the consequence has been a rise of 1s. to 2s. per qr., cakes having risen 10s. per ton, with a lively demand, from the great want of feeding stuffs, through the absence of rain.

Beans have been in short supply, and seem likely to be so, stocks being nearly used up, and actually wanted in the country for stock; so values have improved 2s. per qr., ticks and Mazagans having become worth 40s. Foreign arrivals, too, have been limited, though the last accounts from Egypt noted better arrivals at Alexandria and receding values. The imports into London for four weeks were 1,607 qrs. English, 3,539 qrs. foreign, against 2,095 qrs. English, 3,584 qrs. foreign, in 1869.

Of peas the arrivals have been still more scanty, both English and foreign; and though the demand has not been lively, prices have also risen 2s. per qr. The imports into London for four weeks were 777 qrs. English, 2,557 qrs. foreign, against 335 qrs. English, 2,483 qrs. foreign, in 1869.

Since the seed season has closed, some speculative demand has been experienced for trefoil, at daily improving rates. The crop seems a failure in France.

COMPARATIVE AVERAGES.

WHEAT.			BARLEY.			OATS.		
Years.	Qrs.	s. d.	Qrs.	s. d.	Qrs.	s. d.	s. d.	s. d.
1866...	69,166	46 1	4,026	36 3	3,613	25 3	25 3	25 3
1867...	54,366	64 11	3,163	38 11	3,128	27 0	27 0	27 0
1868...	40,441	74 3	2,670	44 4	2,301	28 8	28 8	28 8
1869...	57,818	44 6	2,367	40 1	1,919	26 11	26 11	26 11
1870...	70,154	44 6	3,657	33 9	2,301	23 1	23 1	23 1

AVERAGES

FOR THE LAST SIX WEEKS:			Wheat.			Barley.			Oats.		
April 9, 1870	Wheat.	s. d.	April 9, 1870	Barley.	s. d.	April 9, 1870	Oats.	s. d.	April 9, 1870	Wheat.	s. d.
April 16, 1870	42 8	31 11	April 16, 1870	35 2	31 5	April 16, 1870	21 5	31 5	April 16, 1870	42 10	35 2
April 23, 1870	42 7	34 11	April 23, 1870	33 1	21 7	April 23, 1870	21 7	33 1	April 23, 1870	42 7	33 1
April 30, 1870	43 3	34 3	April 30, 1870	33 9	23 1	April 30, 1870	23 1	33 9	April 30, 1870	43 3	34 3
May 7, 1870	44 5	34 4	May 7, 1870	34 1	21 9	May 7, 1870	21 9	34 1	May 7, 1870	44 5	34 4
May 14, 1870	44 6	40 1	May 14, 1870	40 1	26 11	May 14, 1870	26 11	40 1	May 14, 1870	44 6	40 1
Aggregate of the above	44 6	40 1	Aggregate of the above	40 1	26 11	Aggregate of the above	26 11	40 1	Aggregate of the above	44 6	40 1
The same week in 1869	44 6	40 1	The same week in 1869	40 1	26 11	The same week in 1869	26 11	40 1	The same week in 1869	44 6	40 1

FLUCTUATIONS in the AVERAGE PRICE of WHEAT.

PRICE.	April 9.	April 16.	April 23.	April 30.	May 7.	May 14.
44s. 5d.
43s. 3d.
42s. 10d.
42s. 8d.
42s. 7d.

HOP MARKET.

Mid and East Kents	£7 0	£9 5	£12 12
Wealds	6 0	7 0	8 0
Sussex	5 12	6 6	6 13
Bavarians	6 6	7 7	9 0
French	5 0	5 15	6 10
Americans	4 5	5 5	6 0
Yearlings	1 10	2 10	3 15

SOUTHWARK WATERSIDE.

LONDON, MONDAY, May 23.—During the past week the arrivals coastwise have been moderate, but owing to the sudden change to warm summer weather the consumption has fallen off more than one-half, and the prices of the former week were barely maintained. The following are this day's quotations:

Yorkshire Flukes	130s. to 150s.
Ditto Regents	110s. to 140s.
Lincolnshire Regents	100s. to 110s.
Dunbar and East Lothian do.	110s. to 140s.
Perth, Forfar, and Fife do.	95s. to 110s.
Do. do. do. Rocks	95s. to 105s.
Do. do. do. Reds	90s. to 100s.
French and Belgian whites	80s. to 100s.

BOROUGH AND SPITALFIELDS.

LONDON, MONDAY, May 23.—The supplies of Potatoes have been moderate. The trade has been slow at about late rates. The imports into London last week consisted of 7,358 bags from Antwerp, 534 boxes from Barcelona, 76 sacks 88 tons from Dunkirk, 2,335 barrels from Gibraltar, 154 baskets 1,036 boxes from Huelva, &c., 1,350 boxes from Lisbon, 3,536 boxes 211 cases from Genoa, and 2 boxes from Oporto.

English Shaws	120s. to 140s. per ton.
Regents	110s. to 130s. "
Scotch Regents	100s. to 130s. "
Rocks	90s. to 110s. "

COUNTRY POTATO MARKETS.—DONCASTER, (Saturday): Only a small supply of potatoes at to-day's market, and this led to rather better prices being made by holders. Regents 12s. 6d. to 14s., and rocks 10s. to 11s. 6d. per load.—MALTON, (Saturday last): There was no settled price for seed potatoes. Table sorts were firm, and not much offered, dealers buying at 12s. to 15s. per tub. Frame-grown new potatoes 1s. 6d.—MANCHESTER, (Saturday last): Lisbon (new) 2s. 9d. to 3s., Cornwall 10s. to 11s., Ormakirk 12s. to 14s. per 21 lbs., Yorkshire (old) 18s. to 20s., Scotch 12s. to 14s., Cheshire 10s. to 12s. per 252 lbs.—YORK, (Saturday last): There was a fair supply of potatoes for the season. Regents sold at 13s. per tub of 280 lb. wholesale, and 8d. to 9d. per st. retail; flukes, from 14s. to 15s. per tub, and 10d. per stone, and rocks 10s. to 10s. 6d. per tub. New potatoes 1s. 3d.

PRICES OF BUTTER, CHEESE, HAMS, &c.

BUTTER, per cwt.: s. s.	CHEESE, per cwt.: s. s.
Dorset	126 to 128
Friesland	88 104
Jersey	90 102
France, per dos. ...	13 15
BACON, per cwt:	
Wiltshire, green....	76 78
Irish, f.o.b.	70 76
Cheshire	64 to 64
Dble. Gloucester....	64 78
Cheddar	74 94
American	68 78
HAMS: York, old....	94 108
Cumberland	94 108
Irish, new	88 110

CORK BUTTER MARKET, (Monday last).—Ordinary: Firsts 109s., seconds 103s., thirds 93s., fourths 90s., fifths 70s. Mild-cured: Firsts 116s., seconds 116s., thirds 101s. In market, 1,300 firkins. (Tuesday).—Ordinary: Firsts 107s., seconds 101s., thirds 92s., fourths 90s., fifths 70s. Mild-cured: Firsts 114s., seconds 103s., thirds 101s. 1,430 firkins in the market. (Wednesday).—Ordinary: Firsts 103s., seconds 101s., thirds 92s., fourths 89s., fifths 70s. Mild-cured: Firsts 113s., seconds 108s., thirds 101s. In market, 1,380 firkins. (Thursday).—Ordinary: Firsts 103s., seconds 100s., thirds

91s., fourths 89s., fifths 70s. Mild-cured: Firsts 112s., seconds 109s., thirds 101s. Number of firkins at market, 1,700. (Friday).—Ordinary: Firsts 105s., seconds 102s., thirds 92s., fourths 86s., fifths 70s. Mild-cured: Firsts 108s., seconds 106s., thirds 99s. There were 1,450 firkins in the market. (Saturday).—Ordinary: Firsts 105s., seconds 103s., thirds 91s., fourths 85s., fifths 70s. Mild-cured: Firsts 109s., seconds 106s., thirds 99s. 1,600 firkins in the market.

GLASGOW, (Wednesday last).—A good supply of cheese in market, 1,478 being laid down. A fair demand for fine qualities at 1s. per cwt. advance. Cheddars (old) 62s. to 71s. per cwt.; do. (new) 50s. to 56s.; Dunlops (old) 61s. to 68s.; do. (new) 48s. to 52s.; Skim-milk 22s. to 25s.

SALISBURY CHEESE MARKET, (Wednesday last).—About 80 tons were pitched. The sale was very dull, especially for thick. Prices averaged 10s. to 12s. per cwt. less than May last year. Skims 18s. to 22s., half-skims 42s. to 54s., Somersets 65s. to 72s.

POULTRY, &c., MARKETS.—Turkeys, 8s. to 10s.; ditto, Irish, 6s. to 9s.; ditto, Irish hens, 4s. to 6s.; Goslings, 3s. to 10s.; Ducklings, 4s. to 5s. 6d.; Surrey Fowls, 4s. 6d. to 7s. 6d.; Sussex ditto, 4s. to 5s.; Boston and Essex, 4s. to 4s. 6d.; Irish, 2s. to 2s. 9d.; Rabbits, tame 1s. 6d. to 2s. 6d., ditto wild 1s.; Pigeons, 6d. to 10d.; Quails, 7s. per dozen. Eggs, best 7s. 6d., seconds 6s. 3d. per 120.

ENGLISH WOOL MARKETS.

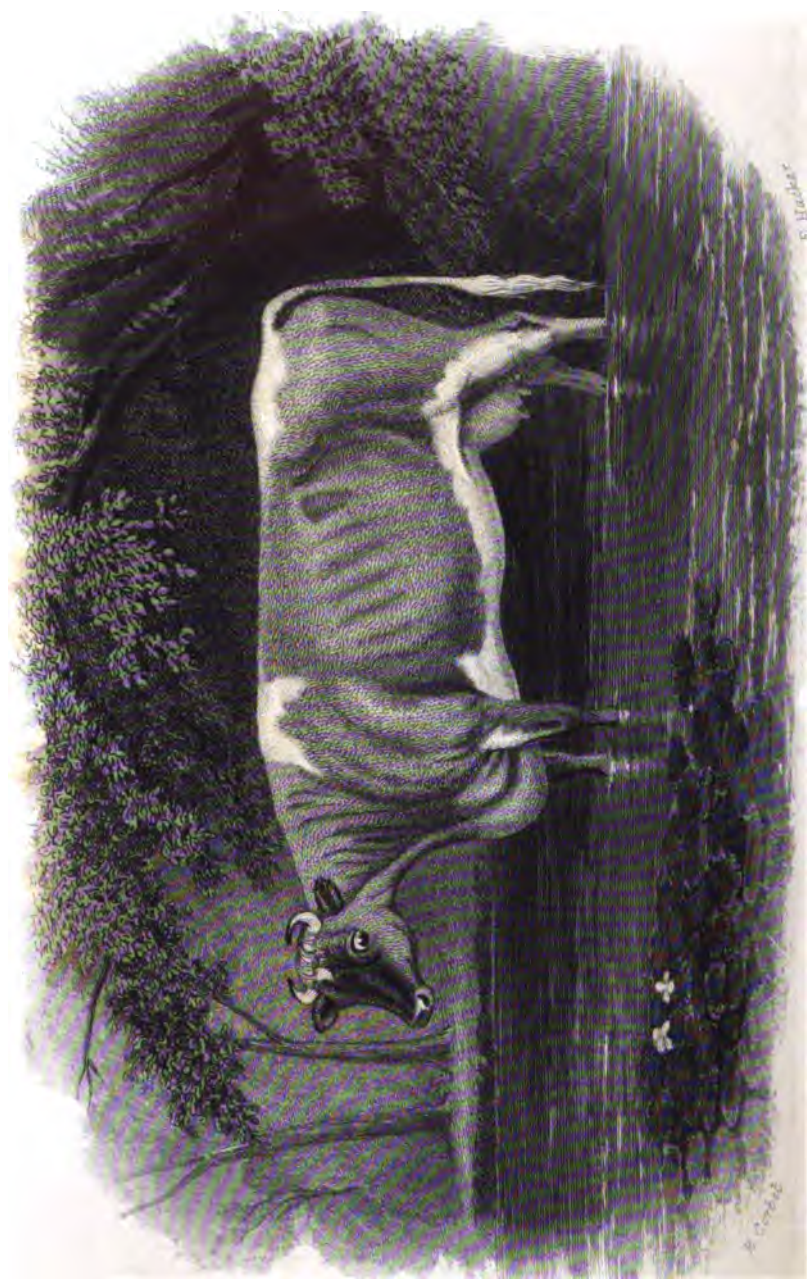
CITY, MONDAY, May 23.—There has been a healthy demand, principally for the choicest descriptions, and values have been well maintained. Other qualities have been purchased to a fair extent.

CURRENT PRICES OF ENGLISH WOOL.	s. d.	s. d.
FLEECES.—Southdown hogs	per lb.	1 0½ to 1 1
Half-bred ditto		1 3 1 4
Kent fleeces		1 3 1 3½
Southdown ewes and wethers ...		1 0 1 1½
Leicester ditto		1 2½ 1 3½
Sorts.—Clothing, picklock		1 4 1 4½
Prime		1 2½ 1 3
Choice		1 1 1 2
Super		1 0 1 0½
Combing, wether mat		1 3 1 3½
Picklock		1 1 1 1½
Common		0 11 1 0
Hog matching		1 4 1 4½
Picklock matching		1 1½ 1 2½
Super ditto		0 11 1 0

BRADFORD WOOL MARKET, (Thursday last).—The tone of the wool market this morning is tolerably firm. The operations of consumers, although greatly lacking in spirit, are just sufficient to maintain prices at about the late range. Firmness is most marked in wethers', which are chiefly in favour. There is now a considerable scarcity of choice, bright wethers', and those that remain are eagerly sought after: prices slightly in favour of sellers. This is, of course, only a small portion of the trade. Most of the descriptions of wool are more neglected, and for some of the inferior sorts staples do not hold out rigidly for extreme rates. In skin wools, however, there is still a fair business doing, and we hear of some rather considerable transactions in the lowest class of Down wools. Speaking generally of the whole market, we should say that its tone, though pretty firm, is spiritless, and that the near approach of the clip deters buyers from operating at all in advance of their requirements.—Bradford Observer.

LEEDS (ENGLISH AND FOREIGN), WOOL MARKET, (Friday last).—The supply of new wool is yet small at the local markets, so that the prices likely to be given have not been tested. The quantity of old wool on hand, though sufficient to satisfy every one that there is no dearth, yet is not so abundant as to produce an impression that the wool market is greatly overstocked. Prices have undergone no alteration. The demand for colonial wool is not very brisk, but prices are well maintained, notwithstanding the large arrivals for the sales next month.

END OF VOLUME LVIII.



Curculio.

A copy of Henry's book is the property of Mr. Philip G. Brown, 25 Irving Place, New York City.

100



The Colonel.

winner of the Newport Stakes & Doncaster People's Chase in 1863 and 1870.

London, Published by Rogers and Telford, 205 Strand, 1870

PLATE III.

CAMELIA; A PRIZE JERSEY COW.

THE PROPERTY OF MR. P. GAUDIN, OF SPRING FARM, ST. MARTIN'S, JERSEY.

Camelia, bred by Mr. Gaudin, took the second prize in the heifer-in-milk or in-calf class of Channel Islands' cattle at the Leicester Meeting of the Royal Agricultural Society of England in 1868; and at the Manchester Meeting of the same Royal Society in 1869 she took the first prize for cows or heifers above three years old. In the year previous, at Leicester, Mr. Gaudin also took the first prize in the cow class with Lady Bird; while the two have won first prizes at the chief shows in the Island

of Jersey. Camelia and Lady Bird are both daughter of another famous cow—Maid of Plymouth.

"Beauty, quality, size, and colour" are the four cardinal points which Mr. Gaudin looks to, as he maintains that he unites these more successfully in the Maid of Plymouth tribe than in any other he has tried. He purposes crossing with this the Lady Greys, from Lady Best, the second prize cow at Leicester.

PLATE IV.

THE COLONEL.

WINNER OF THE LIVERPOOL NATIONAL STEEPLECHASE IN 1869 AND 1870.

The Colonel, bred by the late Mr. John Weyman in 1863, is by Knight of Kars, out of Boadicea by Faugh-a-Ballagh, her dam, Princess of Wales, by Bran—Modesty, by Pilgarlick.

Knight of Kars, bred by the late Lord Exeter in 1855, is by Nutwith, out of Pocohontas by Glencoe, her dam, Marpeasa, by Muley—Clare, by Marmion—Gohanna. Knight of Kars was a fair race-horse, but of nothing like the form of his famous half-brother, Stockwell, Ratanplan, and King Tom. His stock came out in 1863, and he is the sire of some fifty winners, although they are generally better over a country than a course. Mother o' Pearl, however, was a smart mare on the flat, while Albrighton, New Oswestry, Carlos, and Maesgwatha have, like The Colonel, told more in the Steeplechase Kalends. The Knight of Kars, now the property of Mr. Eyke, is located at Stanton, near Shifnal.

Boadicea, the dam of the Colonel, was bred by Mr. Davies on the hills at Monaughty, on the border land Shropshire and Radnor, in 1852, where her dam, The Princess of Wales, was also foaled; the half-bred stain resting with Modesty, foaled in 1827, a daughter on the best side of her head of the Yorkshire horse, Pilgarlick by Woful, out of Elizabeth, by Sancho. All the sort, with

the *A. S.* parenthesis attached to the nomination, could run a bit, and from old Modesty onwards have for the last thirty or forty years haunted the Welsh circuit—Cardiff, Knighton, Ludlow, Tenby, and so forth. Princess of Wales, however, a long way the best of the family in public, occasionally flew at higher game, and once ran well up for the Royal Hunt Cup at Ascot. Modesty herself was no great performer, even about home, but her produce included Mr. Jones' Gorse-bush, foaled in 1834; Mr. Gough's Greenfinch, by Tamworth, foaled in 1837; and Princess of Wales, by Bran, in 1839—all winners. The Princess of Wales was, in turn, the dam of Lily Dawson by Gladiateur, Butterfly by Orlando, and of the own sisters, Minerva and Boadicea, by Faugh-a-Ballagh. Boadicea's only living produce are Lady Port, by Knight of Kars, foaled in 1862, and The Colonel, and the mare herself died just previous to foaling at Little Brampton. Boadicea's career in public was not very remarkable, but her sister Minerva was a capital mare over a country, and in 1856 ran second for the Grand National at Liverpool.

The Colonel is a dark-brown, whole coloured horse, standing close upon fifteen hands three inches high. He has a good but not "pretty" head, long and well shaped,

with a particularly nice expression, auguring everything for his excellent temper. He has a well-inclined strong, but by no means coarse, neck, settling into beautifully laid shoulders. He does not look to be particularly deep in his girth, has a round rather roomy barrel, a rare back, and drooping somewhat short quarters, but jumping like. He is well let down to his hocks, has capital clean legs, with plenty of bone, and seems to be all over a remarkably sound horse. As we have already said of him elsewhere, The Colonel is one of the *neatest* nags ever seen—perhaps the term of all others that best fits his character. Nevertheless, he is not precisely the horse one might look for. He gives you more the idea of a very clever hunter over a trying country than racing away from a field of latter-day platers at Liverpool. Indeed, he has shown more speed than we should have quite given him credit for; as, however slight the stain in his pedigree may now be, The Colonel does not in his appearance convey the impression of being a thoroughbred horse. The Colonel was so called after Colonel, but now General, Percy Herbert, one of the members for South Shropshire.

As a race-horse, at light weights over short courses, The Colonel was a comparative failure; and in the autumn

of 1868 Mr. Richard Roberts, a neighbour and tenant of the late Mr. Weyman, at Richard's Castle, took the horse in hand with a view to more thoroughly complete his education for cross-country work. They chalked out a primitive but a very business-like line about home, and with George Stevens coming over occasionally to ride, and Mr. Mat. Evans, of "The Craven Arms," to set them going, The Colonel was prepared for his two Grand National races. Mr. John Weyman, his breeder and owner, was a tenant of Lord Powys at Little Brampton, where he always had a "likely" nag or two in his stable, on which he would occasionally himself show in public. He did not, however, live to witness the second victory of his horse, that has latterly been under the management of Mr. Evans. The stud came to the hammer at Knightsbridge on the first Monday in April, and The Colonel, at 2,600 guineas, was knocked down to M. André, the representative of the Continental Confederacy, which, as with Blue Gown, has no intention of throwing The Colonel out of work at once. There are some good cross-country races coming on abroad, which it is thought he cannot well lose, and where M. André proposes to act as his own jockey.

THE SALTS OF POTASH.

BY CUTHBERT W. JOHNSON, F.R.S.

The value of the salts of potash as fertilizers is still a moot question with the agriculturist. It is true that one of these, the nitrate of potash, has been long known as a valuable top dressing; but then its value as a manure has been always ascribed to the nitrogen, which is the base of its acid. The other salts of potash have been tried with results so discordant that little reliance has hitherto been placed upon them. The researches, therefore, which have within the last two or three years been instituted by Professor Voelcker, are of great importance. The reader will observe in the results of the most recent of these, to which I shall presently refer, that there is good reason to believe that the use of these salts, in conjunction, at least, with other fertilizers, will be productive of considerable advantage. This is the more important since, by the recent discovery in Germany of considerable deposits of impure salts of potash, their price has been very considerably reduced.

Reasoning by analogy, it would lead us to the conclusion that potash ought, in some form or other, to be a valuable dressing on many soils. There is, perhaps, no saline ingredient so universally present, as an essential constituent in plants, as potash. If, then, the soil becomes exhausted of this alkali by long continued cropping, its application to the land would naturally appear to be a fertilizing addition.

It is in this way and for such a reason, that chalk is added to those soils in which carbonate of lime is deficient in amount; phosphate of lime to such lands as are exhausted of that salt; and sulphate of lime to red clover, sainfoin, and lucern—these three crops containing this salt in sensible proportions.

Before, then, we proceed farther, we may usefully refresh our memories by referring to the results obtained by Professor Way, in his examination of the ashes or mineral substances obtained from various natural and artificial grasses.

The following table gives—I. the ash per cent. in the dried plant, II. the potash, III. the chloride of potassium in the ash of various grasses.

NATURAL GRASSES.

	I.	II.	III.
Meadow fox-tail grass	1.55	37.03	9.50
Sweet scented vernal grass	1.24	32.03	7.06
Downy oat grass	2.01	31.21	4.05
Soft brome	1.36	30.09	—
Crested dog's tail	2.38	24.99	11.60
Cock's foot	1.59	29.52	17.96
Hard fescue	1.66	31.84	8.17
Meadow soft	1.93	34.83	3.91
Perennial dandelion or rye-grass	2.16	24.67	13.56
Annual meadow ... ..	.59	41.86	.47
Smooth stalked meadow grass	1.65	31.17	11.25
Rough stalked meadow	2.20	29.40	6.60
Common cat's tail	2.26	24.25	.70
Annual rye-grass	1.99	28.99	—

ARTIFICIAL GRASSES.

Common red clover	1.85	36.45	2.39
Purple trefoil	1.68	29.13	—
Cow grass	1.77	34.72	.55
Common vetch	1.11	32.82	3.27
Alsike clover	2.12	29.72	6.29
Lucerne	3.04	9.99	1.54

But of course these ashes vary very materially in their composition. Some wood ashes, from Farnham, analysed by Mr. Nesbit (*Jour. Roy. Ag. Soc.*, vol. 7, p. 219), contained per cent.

Silica	4.25
Sand	10.00
Charcoal	0.35
Lime	29.50
Magnesia	6.65
Potash	7.55
Soda	4.89
Common Salt	0.80
Sulphuric Acid	3.25
Phosphoric Acid	4.70
Carbonic Acid	26.00
Phosphate of Iron	2.50
Phosphate of Alumina	0.50

Two or three other facts seem to lead us to the more

careful examination of potash as a fertilizer. It has been ascertained that when a soil is deprived of its potash, wheat or the grasses cease to produce on it remunerative returns. Liebig gives an instance of this in the case of a German cultivator who, in order to obtain potash, planted his land with wormwood, in which potash abounds (the old chemists who obtained an impure potash from this plant, called it "salts of wormwood"). The consequence was that he rendered his land quite incapable of bearing grain for many years afterwards, since he had entirely deprived the land of its potash (*Organic Chemistry*, p. 108). The ashes of wormwood were analyzed by Davy. He found in 10,000 parts of the ashes 780 of potash. In the same amount of the ashes of fumitory 790, and in those of beans only 200 parts. Other interesting researches seem to indicate the existence of a property possessed by soils to store up potash for the use of plants. That they have a very remarkable power of absorbing and retaining these salts was some time since shown by the experiments of Mr. Way (*Jour. Roy. Ag. Soc.*, vol. xi. p. 333). He passed solutions of caustic and carbonate of potash through different soils: in every case the potash was abstracted from the water, and retained by the soil. The same results were obtained when solutions of nitrate of potash, or muriate of potash, or sulphate of potash were employed: in every case the liquid, after passing through the soil, was found to be entirely free from potash. So that, as Way remarks, we thus meet with the unexpected fact that potash, and its carbonate, which forms very few insoluble compounds, are by a power inherent in soils made insoluble and separated from water. The English farmers towards the end of the last century were led to suspect the value of potash as a fertilizer, from noticing the good effects of an application of wood-ashes, since these ashes contain a considerable portion of potash. In Oxfordshire, according to the report of Mr. C. S. Read (*ibid.*, vol. xv., p. 245), wood-ashes are used chiefly in conjunction with other manures; but they are sown after, and sown on clover, sainfoin, and lucerne. It seems that although plentiful in the Chiltern district they are there sold at 16d. per bushel. It is the beech-wood which chiefly tenants the chalk districts of Oxfordshire, and, as we shall presently remark, this wood abounds both with potash and phosphate of lime. One very important fact must not, however, be overlooked—wood-ashes contain other salts of well-known value as manure. The ashes of some of our common weeds, for instance, abound with phosphate of lime. The ash of the couch-grass when analyzed by Mr. Kensington was found to contain in 100 parts (*ibid.*, vol. xviii., p. 352):

Carbonate of potash	14.10
Potash in the state of silicate	0.37
Soda in a state of silicate	5.69
Common salt	3.34
* Oxides of iron and alumina	13.40
Oxides united with phosphoric acid	9.38
Sulphate of lime	9.06
Carbonate of lime	3.80
Magnesia in a state of silicate	0.04
Soluble silica	24.93
Insoluble siliceous matter (sand)	17.50
	100.00
* Oxides equal to bone earth	20.32

In the ashes of several trees which abound in phosphate of lime Liebig found 20 per cent. of this salt. Now this fact is of considerable interest when we are considering the result of Professor Voelcker's trials, of a mixture of potash with other saline dressings. There is, be it remembered, no doubt of the usefulness of these wood-ashes on some lands. We learn from Liebig that so

great a value is attached to this material in the vicinity of Marburg, in Hesse Cassel, and in the Wetterau, in Hesse Darmstadt, that it is transported as a manure from the distance of eighteen to twenty-four miles. In these observations upon the application of wood-ashes as a manure, I have intended the ash as it is prepared by the combustion of the vegetable substance from whence it is procured. It then contains all the soluble salts as they existed in the plant. Another variety of wood-ashes, however, is sometimes found in commerce. I allude to the refuse wood-ash which remains after the common wood-ashes have been lixiviated with water. In those districts where considerable quantities of wood are burnt for the preparation of potash, this residual or insoluble portion of the ash accumulates in considerable quantities. This refuse matter consists, according to the examination of Professor Johnston (*El. Ag. Chem.*, p. 187), of silicate of potash, mixed with silicate, potash, and carbonate of lime, and when applied to the land is remarkably adapted for oats. It is best adapted for clay lands, and where laid on in considerable quantity (one or two tons to the acre), its effects have been observed to continue for fifteen or twenty years.

As the result of the present researches of Professor Voelcker lead him to incline to the conclusion that the use of the salts of potash is often advantageous to potatoes, clover, beets, and turnips, we will note the amount of potash found in the ashes of these important plants before we proceed to the results obtained by the able and cautious Professor.

The composition of these was ascertained by Professor Way (*Ibid.*, Vol. II., p. 530, Vol. IX., p. 189, Vol. VIII., p. 149-141). In 100 parts of these ashes he found the following proportions of potash:

Of the Potato	50.88 parts
" Red clover hay	14.85 "
" White clover hay	14.83 "
" Long red mangold root	21.63 "
" Skirving's swede bulb	36.16 "

The reader must not conclude that the crude salts of potash imported from the Continent are anything but very impure specimens. The composition of a variety of these native salts, imported from Germany, employed by Professor Voelcker in his experiments, were found by him to be composed in 100 parts of:

Moisture	11.63
Organic matter	.73
Oxide of iron	.34
Sulphate of potash	24.03
Sulphate of magnesia	1.14
Chloride of magnesium	12.01
Chloride of sodium (common salt)	47.85
Sulphate of lime	.78
Magnesia	.52
Sand	.97
	100.00

The conclusions to which the Professor arrives from the results of his experiments have very recently been reported to the Council of the Royal Agricultural Society of England, in language which I need not attempt to vary. He observed (*Ibid.*, Vol. VI., N.S., p. 146):

In reviewing the field experiments which, for a number of years, I have instituted with special reference to the conditions under which the land is benefited by the direct supply of potash in the shape of salts of potash, I have come to the conclusion, as far as my present experience goes, that these salts may often be applied with advantage to potatoes, clover, beets, and turnips.

In several experiments, tried on poor sandy soils during the past season, the addition of crude potash salts

to superphosphate of lime had a very marked and decidedly beneficial effect on the potato-crop, and also on swedes. Even when applied alone, crude potash salts benefit materially root crops growing on poor, sandy land. The same beneficial effect, I find by direct experiments, cannot be obtained by the application of common salt—showing that soda is a much less valuable fertilising constituent than potash, and incapable of replacing the functions of the latter in the vegetable economy.

Hitherto the price of potash has stood in the way of its being employed on an extended scale in agriculture. Even in its cheapest form—that of crude German potash salts—potash was too dear for practical application in agriculture. But as potash will, no doubt, be extensively used in agriculture if it can be had at a cheap rate, I have pleasure in directing attention to a mineral called Kainite, which is found in the neighbourhood of Staasfurth, in Saxony, and which, in round numbers, contains 24 per cent. of sulphate of potash, and 12 per cent. of sulphate of magnesia. This saline mineral can now be obtained in England, in a finely-ground condition, ready for mixing with other artificial manures, at about £3 3s. per ton, and probably less when considerable quantities are required. From 3 to 4 cwts. of ground kainite, mixed with an equal quantity of superphosphate of lime, per acre, has been found of great utility in the sugar-beet-growing districts of North Germany; and I have no doubt it will be found equally useful in England, where root crops are intended to be raised upon naturally poor or upon exhausted sandy soils. The crop, however, most likely to be greatly benefited by this potash manure is the potato.

On light soils, I would strongly recommend, as a manure for potatoes, the following mixture:—

- 4 to 5 cwts. of kainite (crude German potash),
- 4 cwts. of Peruvian guano, and
- 4 cwts. of superphosphate of lime.

In buying kainite as a source of potash, care should be taken to have a sample of the bulk tested for the amount of potash which it contains; for not only are some of the samples offered for sale very poor in potash, but some scarcely contain any potash at all.

Good kainite should contain about 13 per cent. of potash, and should dissolve in water without leaving any considerable residue.

The following analysis may be taken as fairly representing the

COMPOSITION OF A GOOD SAMPLE OF KAINITE.

Moisture (loss at 212° Fahr.).....	3.36
Water of combination.....	10.88
*Sulphate of potash.....	24.43
Sulphate of lime.....	9.72
Sulphate of magnesia.....	13.22
Chloride of magnesium.....	14.33
Chloride of sodium.....	30.35
Insoluble siliceous matter.....	71

100.00

*Containing potash..... 13.20

In another report (*ibid.*, p. 153) the Professor gives the results of some valuable experiments, instituted at his suggestion, in the season of 1869, at Eerick Park, near York, by Messrs. J. Coleman and J. Hall upon mangolds.

The mangolds were sown on May 11, 1869, on a barley stubble in 1868. The soil of the experimental field was of a light sandy character, and, though naturally poor, it was in a good agricultural condition, as the produce from the unmanured plot showed.

"The mangold crop was taken up, topped, tailed, and weighed, on the 11th November, 1869, when the following results were obtained:—

Plots of 1-20th of an acre.	Manure per Acre.	Produce per Acre.
		Tons, cwt. lb.
1 ...	No Manure.....	23 10 0
2 ...	Mineral Superphosphate 3 cwts.	23 10 0
3 ...	Mineral Superphosphate 3 cwts. and Potash salts..... 2 cwts.	29 5 0
4 ...	Mineral Superphosphate 3 cwts. and Peruvian Guano..... 1 cwt.	26 0 0
5 ...	Peruvian Guano..... 3 cwts.	24 15 0
6 ...	No Manure.....	21 0 0
7 ...	Mineral Superphosphate 3 cwts. and Potash salts..... 2 cwts.	30 5 0
8 ...	Sulphate of Ammonia... 1 cwt. Rotten Dung..... 20 tons	30 10 0
9 ...	Mineral Superphosphate 3 cwts. and Potash salts..... 2 cwts.	31 15 0
10 ...	Nitrate of Soda..... 1 cwt. Rotten Dung..... 10 tons	31 5 0
11 ...	Mineral Superphosphate 1½ cwt. Bone-dust..... 3 cwts.	27 15 0
	and Mineral Superphosphate 1½ cwts.	

The preceding tabulated results exhibit several points of interest, on which a few observations may be offered:

1. In the first place, it will be seen that the two unmanured portions of the experimental field yielded a fair crop of mangolds. One of these plots produced 23½ tons per acre, and the other 21 tons; or, on an average, the unmanured plots produced 21½ tons of mangolds per acre. The difference in the weights of the crops on Plot 1 and Plot 6 is not greater than can be expected in field experiments. The experimental field thus was tolerably uniform in character and well adapted for the trial.

2. Mineral superphosphate alone gave only an increase of 1½ tons, and thus appears not to be the kind of manure which ought to be employed for mangolds on light land.

3. The addition of 2 cwts. of salts of potash to 3 cwts. of mineral superphosphate proved very successful, inasmuch as it raised the produce to 29½ tons, and gave an increase of 7½ tons over the average yield of the unmanured portions of the field.

4. In these experiments, the addition of 2 cwts. of salts of potash had a better effect than the addition to superphosphate of 1 cwt. of Peruvian guano, or than 3 cwts. of Peruvian guano alone.

5. Peruvian guano alone answered better than mineral superphosphate applied by itself, but did not appear to be the best artificial manure that can be used on light land for mangolds.

We may learn from this that neither the exclusive use of a purely mineral phosphatic manure, nor a manure containing, like Peruvian Guano, an excess of nitrogenous compounds, produces the best crops of mangolds on light land.

6. A moderate amount of an ammoniacal salt, or of nitrate of soda, added to a manure composed of available phosphates and salts of potash, appeared to be very useful.

The mixture of 3 cwts. of superphosphate, 2 cwts. of salts of potash, and 1 cwt. of nitrate of soda, it will be seen, produced 31½ tons of mangolds, which, considering the natural poverty of the soil, must be considered a very good crop indeed.

The same mixture, it will also be observed, had a better effect than 20 tons of farmyard manure: for, while

Plot 9 gave an increase of 10 tons over the unmanured plots, 20 tons of rotten dung per acre produced only an increase of 8½ tons.

7. A heavy dressing of dung proved to be less beneficial than the addition of some superphosphate to a moderate dose of dung. The best crop, it will be noticed, was obtained by 10 tons of rotten dung and 1½ cwt. of superphosphate.

On the whole, the results obtained at Esrick agree well with those described in the series of experiments which were tried by Mr. Ellis at Iver Moor. Both sets plainly show that potash salts are very useful to mangolds, and that, in order to obtain the best economic results from their use for this crop, they should be mixed with superphosphate and a small quantity of either sulphate of ammonia or nitrate of soda.

I have repeatedly observed that a small quantity of nitrate of soda helps on the mangold plants in a striking manner, provided other fertilisers are used at the same time, or the land is in a high agricultural condition. The mixture of 3 cwts. of superphosphate, 2 cwts. of salts of potash, and 1 cwt. of nitrate of soda per acre, can be recommended, both as an economical and beneficial artificial mangold manure for light land."

The result of these researches will lead to other and more extended experiments with the salts of potash. They afford additional evidence of the importance of mixing together our artificial manures, and of avoiding the rapid conclusions at which we are too apt to arrive

from imperfect examinations. That we have during the present century made great advances in our knowledge of artificial fertilizers is an undoubted fact, but then we are well aware that many a vegetable mystery has to be unravelled, many a discovery yet made, before we can conclude that no farther advances are to be made in rendering our soils more productive. We are, in all probability, ever treading on the verge of some discovery relating to the food of plants, a knowledge which our former experience tells us we are often much nearer to, than we are always willing to believe. We have an instance of this in some of the laborious trials of the celebrated Arthur Young. It was in the year 1782 that amongst many experimental dressings he used various salts of ammonia and of potash; several acids, such as the nitric, the muriatic, and the sulphuric; and also impure varieties of phosphate of lime—as in the dung of poultry (*Annals of Agriculture*, vol. I. p. 150, vol. III. p. 122). Had he but mixed some of these together he would have formed that superphosphate of lime which, after the lapse of more than half a century, Liebig first advocated the use in 1840. The very numerous trials of Young were often made in large pots of earth, and extended over several seasons. His reports of them, always graphic, were ever and anon amusingly simple, thus he informs us on one occasion (*ibid*, vol. I. p. 162): "A carpenter letting a piece of timber fall on the pots while putting up a bench, broke some and tumbled the rest over. Here, therefore, ends this trial."

ON LAYING LAND DOWN TO GRASS.

BY THE NORTHERN FARMER.

In mixed husbandry the cultivated grasses occupy an exceedingly prominent and important position; so much so that much of the prosperity of the farmer who follows a fixed rotation depends on their successful cultivation. In the months of February, March, April, and sometimes even a portion of May, their absence, from whatever cause, is extremely noticeable and very much felt, the farm having a singularly bare and thriftless appearance, scarcely affording a bite for out-lying stock, such as sheep, and that at the very season when of all others it is most wanted.

No farmer holding light land can afford to neglect or attend but superficially to the proper seeding of those fields, which in the ordinary course require to be laid out to grass each season. The actual loss of cash in purchasing the seeds is not worth a moment's consideration when compared with the ruinous waste of land, rent and taxes being paid for that which gives no adequate return, and which will never give a return until again broken up, put through a course of restorative husbandry, and laid down in a proper manner. Notwithstanding the very marked improvement in the selection of grass seeds, and in preparing the land for their reception, which has been gradually effected, there is still much indifference displayed on the part of many farmers, and badly laid down fields are to be met with much more frequently than is consistent either with careful management or full profit.

With small farmers the field daisy (*Bellis perennis*) is the usual indication of thriftless pastures, this plant being sure to take possession of soils that have been long worked and laid down in poor manurial condition with bad seeds. Where it exists in abundance, the grass must of necessity be poor, as, notwithstanding the extreme prettiness of the daisy, its tendency seems to be to render those fields which it occupies absolutely sterile.

On large farms, where the manurial condition of the soil has been attended to, but the cleaning neglected, couch-grass is almost sure to have possession, to the almost total exclusion of the grasses which have been purchased and sown, involving considerable outlay of capital. Such fields afford no food for stock; and are easily recognised in spring by the white appearance of the vegetation, the brilliant and refreshing green of the cultivated grasses and clovers being altogether wanting. There can scarcely be a doubt but that the presence of couch in considerable quantity is the principal cause of the wretchedness of the hay crop in but too many instances, as it is quite impossible that the driest spring ever experienced could have the effect of seriously injuring a crop which is cut so early in the season, if the conditions for its successful growth were at all favourable. However rich in manurial constituents a field may be, it is impossible to have a successful hit of the seeds if cleanliness has not been rigidly enforced; and hence, whatever the expectations formed of the future capabilities of that particular field, either with regard to grazing or meadowing, they must inevitably result in disappointment when this has been neglected. Docks and thistles in first year's hay is simply disgraceful, and the man who permits these weeds to be present scarcely deserves the title of farmer, as a very little attention at the proper time is sufficient to prevent their appearance in this crop. Cleanliness and a high state of cultivation we thus find to be indispensable to secure a good hit and vigorous after-growth of the grasses and clovers; and, premising that the land has received all the attention that care and skill can devise, there is comparatively little danger of failure. This is more particularly the case when sown with spring-corn, and put in on the soft tilth a few days after the corn; every seed seeming to take, both clover and rye-grass growing with such vigour

as to threaten serious injury to the grain crop; and, in fact, on those lands which grow soft straw, a wet season does cause considerable loss, as when once beaten down amongst the luxuriant vegetation, the corn is never again able to recover itself. When the desire is to encourage the grasses as much as possible by sowing them simultaneously with the corn, barley on such land becomes a dangerous crop, escaping injury only in exceptionally dry seasons. Oats do well as a substitute, and so does April wheat, both crops standing much better than barley, and when the superiority of the straw is taken into consideration, will in general prove quite as valuable. On those soils on which barley is unusually productive, and being suited for malking purposes commands the highest price, the corn must be permitted to get a good start before the seeds are sown, so that all danger may be obviated. When the soil is rich the latter mode is absolutely imperative, and by adopting it success is nearly certain with both crops, the grasses and clovers not attaining full luxuriance until the severance and removal of the corn. The suitability of the seeds sown to the qualities and capabilities of the soil, both natural and artificial, requires to be carefully studied; as it is sheer folly to sow seeds that will not grow, or if through circumstances being peculiarly favourable they are enabled to make a start, the nature of the soil killing them out before they have been of any practical use. Thus it is useless to sow clovers on low-lying reclaimed soils; as even if when the corn is cleared off the clover appears moderately abundant, by the time spring comes round not a vestige of it will be seen. Alaike, which is supposed to do better on such land than any other, will scarcely be found to outlive the first winter. We speak from experience on this subject, no longer gained than the present season; as when recently looking over a twenty-acre field laid down last year, we found that on the lower half, which was drained some years ago, there was not a single plant of clover, while on the higher portion the surface was completely coated with a most luxuriant growth, the division being as distinctly marked as if drawn with a line. This we take to be a most conclusive test as to the uselessness of sowing clovers on land of a marshy or boggy nature, as the portion of this field from which the clovers have died out has been rendered as dry by artificial means as the upper is so naturally, although previous to its being drained it afforded the best snipe-shooting in the whole surrounding district of country. Some caution is necessary in laying down land to permanent grass, with regard to the introduction of short-lived plants, such as the Italian rye-grass; for, although affording a large amount of food for the first and second years, and having the very great advantage of coming in early, it is extremely apt to leave the sward of grass thin and patchy when it becomes exhausted, the very vigour of its growth preventing the other plants from diffusing them selves. Four pounds to the statute acre we consider quite enough on land in good condition; and that quantity will make a great appearance the following spring. On higher or poorer land, where the growth will not be so vigorous, the quantity may be increased to 6 lbs. When the conditions are favourable for success, the land clean and in good heart, and the seeds of prime quality, it is surprising what a small weight of seeds will prove sufficient for an acre. Although this fact ought to be pretty well known to farmers, it is certainly not acted on by all, as many of them give the preference to quantity rather than quality, covering their fields with the sweepings of some one's hay-loft, without having even once been put through a separator to try and get rid of at least a portion of the light seeds, and seeds of weeds, with which it is too frequently largely intermixed. Trashy as these seeds are they cost money to purchase,

besides the after loss which they involve by the poverty of the pastures. Were the same money per acre given to a respectable seedsman, say from 8s. to 14s., even although that amount would not purchase the full weight of seeds usually given to each acre, yet it would give a much better sward, besides escaping the wholesale introduction of the vilest weeds. It is scarcely safe to sow the grasses and clovers before the first week in April, sharp frosts and harsh winds being of frequent occurrence, both of which are highly prejudicial to the well-doing of such tender seeds. Unless as a mere matter of convenience it is not of the slightest advantage to sow early; those put in when heat and growth have fairly set in making such rapid progress as speedily to outstrip those sown earlier, and which have been checked when in the most critical stage. On lands difficult of access and which have been specially improved at considerable cost for the purpose of being laid down to permanent pasture, the seeds may with great propriety and much future profit be sown without a corn crop; the same course being followed on superior land, when it is desirable to provide a large supply of succulent food for autumn use. In general, however, the ordinary rent-paying farmer, following a fixed rotation, will be loath to sacrifice the corn, even although, from having abundant capital, it may be optional for him to do so if he thought fit. Young grass is in great danger of serious injury from being too closely eaten down in the spring, when there happens to be heavy stock of breeding ewes on the farm, particularly if the season is a backward one. To prevent the lambs from losing condition, the inducement is great to keep them on the seeds rather long, the injury committed by so doing being irreparable. The sheep eat out the heart of the clovers, and many of the plants perish; besides, when the surface is rendered completely bare immediately before the setting in of warm weather, the roots exposed to the scorching sun become so enfeebled as to render growth an impossibility. We consider it absolutely imperative when the young seeds are pastured with ewes and lambs, to remove the stock before they have had time to eat the young plants so close as to cause injury; and if removed in time to permit of hay being taken the same season so much the better, as the roots have then time to establish themselves, and excellent feeding is provided for autumn and winter. Cutting early is of great importance when good pasture is wasted, as the plants, not being exhausted by maturing the seed, make an immediate growth, actually providing more food, and of course keeping more stock after the hay had been removed than would have been afforded for the entire season had the sheep been kept on through the month of April. The after-grass is well adapted for young sheep, such as lambs newly weaned, the herbage being particularly sound and healthy.

THE HEREFORDSHIRE AGRICULTURAL SOCIETY.

—At the annual meeting, Mr. Jancey said he thought the item of payments to stewards might be reduced. He should propose "that the show be reduced to one day before the fair, and that a committee of some few be appointed to see in what way the other expenses could be reduced, and that the meeting be adjourned to receive the report of the committee." Mr. J. Walker seconded this. Mr. Pitt, whilst agreeing with Mr. Jancey, thought, at the same time, that the landed proprietors should make an effort to assist the Society to erect permanent shedding. After some little discussion, Mr. Jancey's resolution was ultimately shaped into the following: "That a committee be appointed to consider the following questions—First, the time of holding the show; secondly, the duration of the show; and, thirdly, the general subject of the finances of the Society."

THE BUDGET.

"The only phase of the argument to which the heads of the present Government have so far appeared willing to yield anything, has been in allowing the farmer more liberty in making use of his own produce. We see something of this in the offer of Mr. Gladstone's Mixture." It was thus that we wrote some six or seven weeks since, immediately after Colonel Barttelot had brought on his motion; while we said, further, that we were "inclined to think this offer of a substitute would only impede, if not the settlement, at any rate the direct discussion of the matter. It is taking us off the line of the hunted fox; while there is something in the very notion of people who brew their own beer having to provide themselves with licences that sounds obnoxious and inquisitorial. Moreover, we much question whether so clever a financier as Mr. Lowe would quite relish the idea of other people, more particularly of other people on the other side, adjusting the nation's burdens for him." And all this has precisely come to pass. With considerable ingenuity the Chancellor of the Exchequer contrived on Monday evening to run, as it were one into the other, the prayer to take the licence off public breweries and to put this on private establishments. He "dashed" one, as he had just previously "dashed" the other; and as for the pet substitute of the present school of Malt-tax repealers, Mr. Lowe "can make nothing of it—it would violate one of the first rules of taxation, namely, that taxation ought, as far as possible, to leave things as it finds them, and not give people inducements to alter their method of trade, and do things which do not tend to the improvement of the revenue." And so they lifted the right honorable gentleman off the line of the hunted fox; as he settled to the scent again just where we thought he would: "It has always been difficult to devise a means by which farmers might be allowed to use malt for their cattle without interfering with the revenue, and I believe all that ingenuity could do in regard to this subject was done when my right hon. friend the present Prime Minister suggested the mixing of the malt with linseed. I think, however, that the problem to be solved was not properly stated. It ought to have been put, not 'How can we allow the agriculturist to feed his cattle on malt?' but 'How can we allow him to feed his cattle on barley which has arrived at that stage which is best suited for the feeding of cattle?' One process which barley undergoes leads to the germination and generation of the saccharine matter, and the second is the kiln drying, which has no tendency whatever to improve the malt for the purpose of feeding cattle. On the contrary, it is prior to the kiln drying, when it is not parched up, that the barley is best suited to that purpose. What I propose, then, to the Committee is that we should permit farmers to steep their own barley and feed their cattle with it. The only precaution necessary to take, in addition to the ordinary Excise precaution of liberty to visit the premises, will be to provide that there shall be no kiln on the premises, or within a reasonable distance of them—say a quarter of a mile—so that we may have a reasonable assurance that the barley is really intended to be used for feeding cattle. I understand that when barley is in such a state that it is ready to be kiln dried, it is most suited to the feeding of cattle, and the Inland Revenue Department think we can make this concession to the farmer without putting the public to the great loss and injury which would result from transferring the incidence of the tax from malt to barley." And this, as we said before,

we say here again, is all farmers may expect to get in the way of relief from the present Government; as even this, according to Mr. Sewall Read, is not so much: "He dissented from the Chancellor of the Exchequer's statement that in allowing farmers to use sprouted barley for cattle food he gave them the very best produce capable of being made from barley for feeding stock. Malt was very much better, although it was not necessary to dry or roast the malt to the extent necessary for making beer." Noticeably enough, however, at the very last meeting of the Council of the Royal Agricultural Society, Mr. Thompson, as Chairman of the Journal Committee, recommended "that a series of experiments be set on foot during the next autumn and winter to test the comparative feeding-value of barley and malt, at a cost not exceeding £100." And this report was adopted. It would so seem that any such comparative value is not even now a settled question, although people were getting already weary of experiments, which may probably be made to cut either way.

There can be little doubt, moreover, but that many farmers are themselves getting weary of the manner in which the case of Repeal has of late been worked. The proposal of so inconvenient a substitute as that named was, as we maintained from the first, a mistake, and the sooner that it is dropped the better. Again, it is very evident, as we have continued to urge, that a Liberal Government does not intend to repeal the Malt-tax. We have said, "As a winning game, the battle has now for many years been fought in direct defiance of the first principles of political strategy. The chief 'opportunity' has generally been found when the Country Party is in opposition, or, in plain English, when a minority might be expected to rule a majority." To carry repeal, the agriculturists will have to *create* "a Party," the only question being, whether the county members are sufficiently in earnest to be put at the head of the movement? Plainly we doubt this, for so far they have pretty generally taken up the cry for election purposes, and for but little more. The true men in this way, in the House, might be counted off on one's finger ends. Our contemporary *The Economist*, whose opinions were so ludicrously adopted and hawked about elsewhere, thus coolly dismisses the subject on Saturday last: "It was only imagined that Mr. Lowe would reduce the malt-duty, because it was thought such a policy would be popular in counties. But this is quite a mistake. Not one county in ten cares the least about it or would benefit in the least by it." We will not go quite so far as this; but we are very sure that not one county member in ten cares the least about it. "Well, he did not exactly promise me anything, but he pressed my hand, as much as to say, 'Your business is done,'" reported the needy man to his family after his interview with the Minister; and very much in this way did the Central Chamber talk of its interview with Mr. Lowe. But then it is the inevitable fate of this same Chamber to muddle everything it touches, and the next step will be to try and forget as soon as possible the famous substitute "which would violate one of the first rules of taxation."

They tax the team horses, they tax the shepherd's dog, and now they are going to tax the bird-boy's gun. However popular the budget may be with other classes, it would certainly not threaten to find much favour with the farmer. But prettily as this notion of a gun-tax was

put, we fancy that we see in it something more than that which floats on the surface. There may be a growing inclination amongst Englishmen to carry arms, although saving in the way of the Volunteer movement this has not been so apparent. Still, there may be a budding tendency to expand such a habit. Let but the Game Laws be only partially repealed, let hares and rabbits come to rank no higher than rats and mice, and everybody will be ready to have a pop at them. In fact, but for this general gun charge every other man would then saunter along the roads and lanes with a gun in his hand instead of a stick or a spud. In any case the number of accredited Shots must considerably

increase. A professional man or a lad home for the holidays will, as it is, often take out a certificate for the sake of a week or so's sport; whereas, on the other hand, many are debarred from doing so by an expense which will no longer stand in the way. The outlying birds, as well as the mere vermin, like rabbits, will be more harassed than ever, and the change should so be fraught with some good, if it be not the prelude to something more. If, however, an exception is to be made in the case of the Volunteer, this should certainly be extended to the farm-servant whose business it is to scare away the crows or kill the vermin which injure his master's crops. —*Mark Lane Express.*

THE NEW FARM.

"Good news from home"—nay, rather sad news from farm. I say nothing of the murderous conduct of the frost towards the young ley planted wheats, nor of the cruel nip it has caught the clover stems just at the back of the neck, giving them a rheumatic twinge where the roller had managed to bruise it. I say nothing of that, for a good stirring with the horse-hoe, which is working capitally, will cause the one crop to tiller, besides, that under the surface, I find many weak seedlings just ready to start if more genial nights would encourage them. The wheat I don't think is after all as bad as it looks, although several of my neighbours are, I understand, breaking it up and replanting with barley. The clovers too were well dressed with a coating of long manure, so that I think they may come round, for there is nothing like long drawers and good keep for a cold. The intelligence is unhappily of a more vexatious description. A valuable young porcine matron, vexed I fear by the severity of her throes, has turned cannibal and devoured her offspring; while, on the other hand, master reynard has found our juicy stores out again and has appropriated several of our darling wild-ducks. This is the more annoying as we cannot leave them out at night now, and the usual region of their nests is unsafe. Unluckily they require to choose their own, and will not sit just where the fowl-wife wishes, so we have the carpenter building rafts to float on a pool enclosed within the fold-yard, hoping that the red robber will not venture there. He is, however, *sufficiently* bold, as Ciceronian authors write. In fact he waylaid his first victim quite close to the kennel of a terrier that, remembering former experience, I thought well to chain up in the orchard beside the faggot-heap, under which the ducks build. It was a curious upstanding, head-on-one-side, swaggering, tailor-like, comical, little mallard, white as snow too (being a cross with the call-duck) that he took first. The bailiff and I had been looking at the bird with some amusement during his afternoon meal, and observed that by some means he had lost an eye, a misfortune which possibly caused his quaint air. Perhaps, too, it was with a view to protection that he haunted the neighbourhood of the kennel, keeping his extinguished eye on that side, as the one-eyed hind of which there is record in *Æsop's* fable. Reynard is cute enough, and no doubt argued that where there is a kennel there is probably too a chain, and so he ventured up, choking our hero's throat by one snap of his lancet fangs, and completing his triumph by devouring the greater part of him on a neighbouring fallow. This was bad enough, and we were at once on the *qui vive*, but it happened that a few days later the children going to a low lying meadow, beside a brook, to gather violets, came across the carcase of a vixen fox with brush and foreleg gone, and a piece of lamb in immediate proximity.

An immense forest and a large tract of rocks, inaccessible to hounds, being situate not many miles hence, the foxes breed there in great numbers, although until lately they have not troubled our hen-house. I am afraid that under all circumstances there was about our homestead a feeling of something like exultation that the thief was caught, and the ducks got their freedom again. A fortnight from that date, however, only last Monday morning, as we arrived to look round, the hen-wife took a mallard's gorgeous head from a cleft in a twisted pear-tree, saying, "Master Fox has been here again." On the evening before I had been watching with so much delight the love-making rambles of the various pairs as they went working about in the old grass, and sucking ever and anon what seemed especially delicious, something I could fancy between a slug and a kiss, for their bills were working together in the same spot. So, too, the cunning plunderer must have found them, and, with a feeling of undoubted glee at the sport he was to spoil, came creeping from apple-tree to apple-tree until he got conveniently near to grab them, which he did most effectually, just cutting their necks through and leaving the bodies behind, having possibly been disturbed or struck with a feeling of due remorse. So the carpenter now is hard at work providing what I trust may prove a residence of safety. The cottagers under the hill tell me that they hear his lordship bark nightly. The plan they adopt to scare him from their tiny lambs is to rub them well with a ring of red ruddle around the necks. He will never touch a youngster so distinguished they tell me. There being plenty of rabbits about why cannot he be content therewith? From an apprehension possibly of taking tapeworm on board, a delectable form of parasite from which these pestilent ground game suffer considerably, as we were informed by medical authorities during the Trichina discussions, and which has made ourselves resolutely set face against what we were wont to consider, when boiled and smothered in onion-sauce, a delicate and delicious food.

Having all but overlooked "Observans's" letter, I am happy to give him the benefit of my experience in bull breeding if he will take it for just as much as it is worth. If he wishes to exhibit he must from the first do the calf well, keeping it in a box and letting it to its mother, or better to a deep-milking half-Alderney twice or three times a-day, and supplying it with meal, roots, cake, eggs, fine hay, &c. Feeding for exhibition is an art in which few thoroughly succeed, unless they have to help them a servant who has the inborn gift of knowing when and how. For it is no less. I will not bother him, however, but just answer his inquiries. The bull calf ought to have a light ring put into his nose as soon as he is

weaned, and as soon as the wound is healed the breaking should begin. Let one man lead him, or rather try to lead him out, for he is sure to pull back and resist. The smart application of a switch to the region whereby youngsters are best instructed will make him jump out and struggle. Pat and sooth him, the man in front holding him steadily meanwhile and walking on. Then if he again holds back, again the smart administration behind. One or two days of this tuition will ordinarily bring him to lead quietly. He should then be led and exercised daily, with many interludes of soothing and petting.

"Observans" will remember Lord Byron's recipe for dealing with a fractious flirt. "Pique her and soothe her: soon you'll have your way." So, too, he must conquer his Shorthorn princesses. He cannot break them in too soon. I had two gentle bulls last year, which, being kept for home use, were not fairly broken. The consequence was they could only be driven in company with a cow—and not led. This, in the end, became vastly inconvenient. A bull calf will do well on good pasture running by his mother. They should be driven under shelter during heat. I think, too, that there is something in what old breeders say, that the tail of a calf that runs with and sucks his mother on the open is apt to be high. "Observans" will notice that they generally suck swaying that appendage triumphantly in mid-air. On the field of course they suck oftener than they do when kept within doors. Hence, either the joint loosens out of symmetrical position, or at least from too frequent a repetition of the act they form a *habit* of carrying the tail high. (For further information on this head, see Aristotle's *Ethics*, Book II. cap. 1.) I have found no difference in disposition between bull calves reared two in a box or singly. Their boxes should be free from publicity. Being looked at, especially if there be a walk in front of them, irritates them terribly. I had one amiable fellow spoilt by the tricks of a lad tending a mason, whom I had occasion to employ near the box, and whom I wish the animal had pitched into primeval mortar.

I remember asking Culshaw about a bull which I bought at Towneley, and which became cantankerous. After an instant's thought he said, "oh, it's all owing to So-and-so" naming one of his ancestry. Temper is undoubtedly inherited. I had one youngster made so quick in his temper that he was called after a distinguished

auctioneer, all owing to a young lady with a white veil peeping hastily into his box through the open half-door. He started frightened to his feet, and from that hour continued fractious. I sold him, however, and the last time I saw him was with a rosette upon his brow in the show-yard, as gentle as need be. He had been put by his new owner into a secluded box, and treated by his attendant judiciously, with a mixture of severity and kindness.

Another amiable yearling having been turned into a yard for exercise, got his attention attracted by an old man who stupidly took that way to carry some straw for thatching. A few journeys passed off well. At last the animal took to follow and rub his front against the bundle. Finally, with a frik, he upturned the straw, and by consequence the old man too, who hobbled off in a fright, leaving the bundle to the bull's mercy. The animal reflecting on this issue became savagely addicted to butting from that day. It is with young bulls as with young boys; be firm, patient, and considerate. Promptly check any liberty taken; acknowledge and reward obedience. And now I think "Observans" will have had enough of me.

There have been several salmon taken by anglers in the pool under the house, but I find there is a gang of others bent on spoil. One of the professional fishermen informed me first. You may hear them "whistle in the stilly night," and the mud is covered with their cat-like tracks.

Being out early this morning, I found two of my men hotly tearing down a bank into which they had seen a weasel run. I disapproved and stopped them, for last week one of the stack-yard cats caught one and killed it, and on thrashing out a rick alongside we found no less than fifty rats, young and old, which this foreigner had doubtless come after. This vermin swarm had invaded us when our neighbour cleared his granaries, for we had been comparatively free before. The weasel I think does more good than harm. The stoat is of quite another sort. When we set about thrashing we had the gardener's fruit-tree nets stretched around the proceedings; the consequence was that not an individual rat escaped. The terriers caught every single one, no matter where they broke, being baffled by this fence, which they were not allowed time to gnaw through. But I have shot my allotted arrows. Once more adieu! VIGIL.

THE SCIENCE AND PRACTICE OF SEEDING.

Professor BUCKMAN has delivered a lecture before the Blandford Farmers' Club on this subject. He said he should only touch upon a branch of the subject, calling their attention to a few facts connected with agricultural seeds, and referring to certain experiments which he had made. With regard to our crop plants some people entertained the idea that when man was originally placed on the surface of the globe all plants necessary for his existence were put on the earth with him, just ready to his hand, ready to cultivate and work upon. But he entertained a perfectly different opinion. He believed that all our farm plants were derivatives, that by experimental processes they had been derived from wild ones. He inferred that all our garden esculents had been derived from cultivation, the forms and varieties gradually increasing and improving. They would observe the important fact that plants thus derived required cultivation in order to keep them in the position in which they were found. If you had a good plant it was important to pay a deal of attention to its development and growth in order to keep it in its position. With regard to seed it was important that they saved good sorts, that they did not allow it to grow wild and scattered about the

ground; they should adopt something like scientific processes in choosing that kind which they knew was the best for their purposes. Respecting the sowing of it, too, there were certain processes to be observed. They should take care to sow it sufficiently thin, so that one plant should not obtrude upon another; thus they would get those plants which would pay them for the different processes which they adopted. He had performed a few important experiments some time ago. He had always heard it asserted in some parts of the clay valleys that oats could not be successfully grown because they degenerated into wild oats. This might be a farmer's notion; but it was not a scientific notion. His notion was derived from experiment and practice; he believed that the wild oat was capable of producing the cultivated oat. The learned professor here entered at length into some experiments which he had made, illustrating his remarks on the black-board; he drew specimens of the wild oat, and some of its derivatives, showing the different auzes, also the long spikes, the silky hairs, and the berries characteristic of the plant. He had cultivated some of the wild oats, and next year he found that they contained seeds; by the process of cultivation he obtained in four

or five years oats of 38 lb. to 40 lb. per bushel. He was soon made aware of this fact when he examined some of the oats grown under wild circumstances, grown round the oat ricks—he found that they were not so good as the crop which he had sown. When he went into the market and found oats 86 lb. and 38 lb. per bush, he saw that some were thin in the berry, with some hairs at the base, showing that they were not the best kind, but oats that had degenerated into wild oats. There was every reason to believe that after all the wild oats about our farms had in a great degree degenerated from the cultivated oat. The inference was that, inasmuch as wild oats were capable of being by cultivation, getting the best examples, improved to a cultivated state, so cultivated oats would degenerate into wild ones. If they sowed oats of a poor quality on poor land they would find that they would have a poor crop. He deduced, as already stated, this fact; that inasmuch as wild oats were capable—by care and selection, by being put in prepared, cultivated ground—of advancing in the course of years to good cultivated oats, so good cultivated oats were capable of degenerating into wild oats. As the result of an experiment he had taken the seeds of a wild vetch and cultivated them, when he became aware of this important fact—that under cultivation half the seeds would be very small indeed, while the others would be double the size. Examine any vetch you liked, any sample produced that you liked, and you would find that the seeds varied considerably in size. He went to a farm, and he was shown some small vetches; the farmer admitted that they were small, adding “But then you see you get the measure.” Now experience showed him (the professor) that measure was not enough for him. Giving the result of experiments with the smaller and larger specimens, he showed the advantage of the latter. As a general rule they would find, he urged, that the best seeds would, under all circumstances, be the best for sowing. It was a folly to suppose that filling up the measure would answer the end in view; small specimens produced but small results. It was the same with plants as with animals; if you had not a good sire or dam you would be quite sure to have small results. He wished them to understand with regard to vetches that the matter of selection of the seed should be observed; that cultivated vetches were but derivatives from the wild vetch. Proceeding he entered into an account of experiments with the wild parsnip. He had some specimens of the wild parsnip, which he put in a new bed; he selected the seeds, planting them in prepared ground, and instead of having the forked roots (indicating the wild parsnip, as shown on the black board) he had the larger esculent (also drawn), which was at present in cultivation under the name of the student parsnip. Any of his friends present could try the experiment; they could take the wild parsnip seeds and put them in a drawer till next spring; then they could put them in a prepared bed. Some, they would find, would be covered with hairs, and wild, dark coloured; others would be light coloured. They must select their roots. Selected roots are of the utmost importance. From all the experiments to which he had referred he concluded that all our garden esculents, all our cultivated farm plants, were derivatives; that they had all been derived by cultivated processes familiar to every farmer, and which he constantly carried out. The farmer had his change of seed; he got his seed from different localities—these were cultivated processes. His (Professor Buckman's) object now was to point out the principles upon which those cultivated processes depended. In the first place the selection of seed was of the greatest possible importance. They knew very well that when they selected their seed they endeavoured to get seed of a good quality. They wanted occasionally to change the sort of seed. Why was this? Because if they did not change the sort, if they kept the same place for sowing, they would be neglecting some of the cultivated processes by which the sorts they aimed at had been derived. They wanted not only to change the description of seed but also to change the soil; they must go from one locality to another. Professor Buckman recommended that, when practicable, crops produced by the kind of seeds offered for sale should be examined. He observed that when a new sort was introduced into a district it became fashionable, for the reason that it had never been tried before. It took a new position. Your neighbour got an excellent crop from it, better than before; so you tried it yourself, and it became fashionable. But by and by another sort was introduced. Change was necessary on the principles which he had already

pointed out. From perpetual changes they obtained better crops. The greater the amount of changes the more they were likely to succeed. There was ample evidence afforded that the cultivated processes must be paid attention to. If this were not done no good results could be expected. Next he would call their attention to the quality of the seeds. They all knew that the seeds of all their crops varied very considerably, but they were perhaps not aware of the amount of variation. He had experimented largely with reference to this question, and he had come to the conclusion that a great number of seeds were sold in the market which ought not to be sold, for they did not germinate; they contained a great quantity of weeds. It was of the highest importance to get the seed free of weed. He had seen samples containing enough weed to stop all growth. Such samples every right-minded and judicious farmer would repudiate. With regard to wheat and barley he had tried some experiments. He had seen samples of seed of which 72 per cent. failed to germinate. He had seen barley of which 24 per cent. failed. Of some samples in his own neighbourhood the failure reached 30 per cent. Persons sowing seed at the present time sowed in some cases a sack per acre. Now before sowing they should try to do what he had always himself endeavoured to do—ascertain the germinating power of the seed. He never put into the ground a sample of wheat or barley until he had ascertained, if possible, what per-centage would come up, how much per cent. would germinate. It was easily done. The plan he adopted was to take a small flower pot and press the soil in it, leaving the seeds even; he put say a hundred seeds in. If placed in a hot-house the seeds would come up all the quicker. Thus they would see the amount of germinating power. He had done this frequently. He had made three or four experiments with barley. He had been much struck by some samples sent to him from the market. He remembered, for instance, receiving a sample of turnips. It was represented to consist of selected bulbs, and 96 per cent. would, it was said, come up. He tested the germinating power for himself, and found that 26 per cent. would not come up, notwithstanding it was represented that 96 per cent. would be the yield. Therefore it was important that farmers should be careful in these matters, that they understood the principles involved. They should ascertain for themselves as much as possible with regard to the quality and germinating power of the seeds. A respectable seedsman would ascertain this for them; still, they must look into the matter themselves—make it a matter of business, only trust worthy men. He should now like to point out to them some facts—which he hoped they would consider interesting—connected with the quantity of seed to be sown. This was a subject which would occupy them until midnight; however, he did not intend to keep them very long; he should merely point out some facts and experiments connected with thin seeding which, if they did not care about practising, they would at all events, he hoped, consider somewhat interesting. Regarding the quantity of seed to be sown, then, it must be regulated by various circumstances—not only by the quality of the seed itself, but by the climate, the soil, the kind of cultivation adopted, the forwardness of the work, and other circumstances which it would be quite idle for him to explain before such a society as that. He would point out to them some experiments which he had made in his own district. They might look upon him, he dare say, as a scientific man; but he only pretended to be a plain farmer, and if they came to his farm they would, perhaps, find many faults. They knew well enough that a person might have ideas and opinions, but could not get them carried out; he knew that for his own part he should find a difficulty in getting his men to do all the things he wanted. When he entered upon his farm his neighbours questioned the expediency of using superphosphates and artificial manures; they had not experimented with them, and they thought that it was no use for him to try them. He, however, adopted his own course, and the result was that persons were now using some of those appliances which before they would not use because, as they imagined, of their intility. He did not pretend to be a good farmer; he was not half so good a farmer as some of those present. He did not think he had farmed to much profit; he had, however, endeavoured to effect and carry on improvements, to make certain experiments connected with the science of agriculture, and that was as much as should be expected from a young fellow like himself.

He had determined to try experiments with regard to seeding. He had a capital man—a superior workman—he must not call him a bailiff because that was a swell name for a small farmer's man. He found, respecting barley, that his man was using for seed a sack of barley per acre. He said to him "That is too much. Suppose you take a tumbler and put three potatoes in it; you will find them too thick; or if you take a thimble and sow three or four barley corns in it you will find them too thick." He showed him that with regard to the sack of barley per acre he was doing pretty much the same thing. He, however, was at that time in a fresh district, and he had always respect for men acquainted with the district. He studied principles particularly because they could be applied universally. He was told that a sack per acre was not too much, and that his neighbour was sowing a sack and a-half, which really proved to be the case. It was remarked: "If you don't put it in, sir, you cannot expect to get it out." But after all that was not a scientific argument. If they came to analyse it they would see that there was a fallacy in it, which he should not now stop to point out. In 1864 he tried the experiment of four bushels of barley; in the following year he tried three, and he had a good crop—he thought quite as good as that produced by the four bushels; probably better. In 1866 he again tried three bushels with the same satisfactory result. In 1867 he tried two bushels, and in 1868 the same quantity, with favourable results. These experiments proved to him the advantages of thin sowing. He sowed in one part of the ground six pecks, and in another four pecks; they were in the same field, and the other circumstances were the same. As a result he had from the four pecks the most magnificent barley. The result of the whole experiments tended to show that the thinner the sowing the better were the samples produced; and an improvement in the quality of the produce, with a saving in the amount of seed, surely seemed desirable. He recommended them to make these observations for themselves—to put down to "log" every event. They should record the germinating power of their various seeds; the dates at which they were sown, the dates at which they came up. Putting all the circumstances together they would be able to say a good deal on the matter which they could not say unless they had some such evidence as that. What he said and wrote became scientific evidence; practical farming was the most scientific work in the world. Offering some remarks by way of conclusion the learned lecturer said he had endeavoured to point out certain principles from which certain facts might be deduced. He believed that the plants to which he had referred were derivatives. He had tried to show them the advantages of thin sowing where circumstances admitted it; if plants were sown thickly you never get anything like the crop you would otherwise have. A specimen of wheat was on one occasion submitted to him for examination, when he observed that it was "smothered out by weeds," or in other words that three or four times as much seed as was necessary had been sown, the greatest weed in a wheat field, as was once well observed, being the wheat itself. The gentleman who showed him this sample belonged to the county, and this conversation took place at a meeting of a board of guardians. They would see that sometimes a little business was done by boards of guardians. The gentleman knew it was a small kind of wheat, and denied at first that it was smothered out by weeds; it was, he said, "the cream of the flower garden." He, however, ultimately admitted that too much seed had been sown, that they had a little over, and they put it all in. The result was a poor crop. By the use of the black board the Professor illustrated the advantages of thin sowing with respect to oats. He found, he said, that he could grow oats on his light soil with a great deal of success, but in order to secure success he must sow half the quantity usually sown and the best seed he could procure. He did not look at seed that did not weigh 45lb. to the bushel; he had seen seed 48lb. to the bushel. If he sowed light samples he had a perfect failure. He had concluded from all the experiments he had performed that after all the best seed they could get was the cheaper to buy under any circumstances. No matter about the price; the best, the plumpest seed they could buy, was the best developed, the highest cultivated. They should aim to get as the parent of a crop, so to speak, a high kind of seed, just the same as they did with regard to stock. If they used degenerated sorts, why then, as with regard to their cattle, they were certain to meet with failure. He ad-

mitted that they could not do all this at once; they could not adopt the system of thin seeding at once. He congratulated them on burning their couch, which could not in that case hurt them. Some put it alyly up in a corner, fancying that it would rot. But he held that decidedly the best policy was to burn their enemies and to let their ashes become useful. He alluded to the large number of seeds from the common dock; he had counted, he said, as many as 80,000 seeds on one plant alone—at least he set a class of 20 students to do it, giving a branch to each student. To put weeds alyly in a corner did not, it must be confessed, look very well—that was not getting rid of the enemy. He fully recognised the advantage and importance of farmers' clubs discussing questions such as those which he had brought before them.

Mr. H. FOOKES (Whitchurch), thought they were much indebted to Professor Buckman for his capital lecture; he had given them a great deal of good and useful information in a plain, straightforward, and interesting manner. He had given the results of experiments which could be tried very easily by any farmer who had 50 acres of land. He (Mr. Fookes) did not exactly agree with the lecturer as to thin sowing; at the same time Professor Buckman had well observed that climate and other matters should be taken into consideration. He agreed with the Professor that the very best seed you buy was the cheapest in the end. Mr. Fookes referred to the success with which for a time he had grown Spalding wheat; he had sown it, he said, four or five years in succession; last year he sowed it on the race-course at Monckton. He liked, however, to change the sorts as often as he possibly could. He had found the Spalding wheat to degenerate. They had received some valuable information regarding oats and vetches, and he thought they would go home profited by what they had heard.

Mr. H. RICHARDS (Abbot's Court), inferred from what the Professor had stated, that in order to meet the question of thin sowing you required the land to be in a good state of cultivation. He could not believe that land in a low state required thick seeding. "Thin sowing" had been his motto for many years, and he believed he had never suffered from the practice; many had, however, he thought, suffered from too thick sowing. A good deal had been said about the members of farmers' clubs burning their couch. He had himself heard a good deal about it, but he did not attach much importance to censure passed upon them. He did not mean to say that members of farmers' clubs were better farmers than others, because he knew many non-members who were thoroughly good farmers. Great good, he thought, was derived from the plan of comparing notes together, stating their experience.

Mr. ROBERT FOWLER (Whitchurch) said in the professor that he did not only practice but also science. As far as his own (Mr. Fowler's) experience went the best thing they could do was to thoroughly cultivate, cleanse, and manure their soil. Next they must put in the best seed that could be bought for money at the best season of the year. They should keep the ground thoroughly clean and trust to Providence for the result. He had found from experience that the theory of thin or thick sowing should be guarded against by circumstances. When he began working on a little farm in Hampshire he almost insisted on it that the men should not use so much seed: He thought that twice as much seed was sown as ought to be. They then began thin sowing. But he had lived long enough to benefit by the experience of his neighbours, to know that they were not all fools; and he had gone back to their system, sowing as they did, as thick as ever they sowed, and perhaps thicker at times. If he had failed to do this it would have been much to his disadvantage. With regard to the quantity of seed sown farmers must be guided, he was satisfied, by climate, soil, and other circumstances. In some land a bushel would produce as thick plants as a sack would produce on other land. Regarding the wheat it had been thinned out this year by the frost; the frost had done it this time, and no mistake. He was only the previous day invited to ride over a friend's farm, his friend not knowing what to do with the wheat, it was so thinned by the frost. He had ploughed up a portion of it. His (Mr. Fowler's) advice was that if the land was thoroughly manured and in a proper state of cultivation the crop should be allowed to take its chance; but that if, on the contrary, the land had been worked out and was poor then there was no chance, and the

wheat might as well be ploughed out. He believed that a few years' practice taught them a vast deal. They did not find out things until they made certain experiments. He had learnt a little from what the professor had told them. Generally they coincided, he believed, with the views which he had advanced. Personally he had found by experience that it was essential to thoroughly cultivate and clean their land, using proper seeds at the proper seasons. He returned his personal thanks to the professor, whose pleasant countenance he hoped soon to see on his little farm at Whitechurch.

Mr. CHARLES FLOWER (France Farm) stated that some three years ago some white oats were bought at Bristol and sown in a good piece of land; the next year a capital crop of barley was reaped. This story had originated with Mr. Meikle, of Langton (Mr. Farquharson's bailiff) whose authority was undoubted.

Mr. FLOWER mentioned the case of a piece of wheat being spoiled by wild vetches. It had been pronounced to be a capital piece of wheat, and it was such, but under uncomfortable circumstances. Strange to say there had been no vetches there for 30 years, and the wheat crop this year was after two years' turnips. Now where the vetches came from he did not know.

Mr. FLOWER mentioned a report that couch properly cultivated turned into wheat at times.

Mr. G. GALPIN (Gamerton) joined issue with Mr. Richards on the question that it was unnecessary for the farmer to study chemistry. If you said that the farmer should not study it for himself, you might just as well, he thought, state that it was unnecessary to read a book yourself; somebody else could be paid for doing it for you. He wished the professor had spoken on grass seed; but time, he supposed, did not allow of his doing so. There were a few questions which he wished to put; one was whether it was not probable that in buying grass seeds you frequently bought couch. He would also ask the professor to enlighten them as to whether there was not two or three sorts of couch. He remembered buying what he took to be rye-grass; he called the attention of the seller to some small seeds, and the explanation was that it was grown on new land and had not come to maturity. He (Mr. Galpin) sowed it on clean land, but the result with regard to the quantity of couch was striking; he almost fancied that he was sowing couch grass. Now this was an important subject; he did not think they were able sufficiently to distinguish the different grasses. The whole subject of grasses was, he considered of the highest importance and demanded the utmost attention.

Mr. G. KEYNES (Spettisbury) thought with regard to thin sowing that they should study their land; he did not see that too thin sowing produced blight more than thick sowing did.

Mr. T. H. SCUTT, the Chairman, thought with a previous speaker that the subject of grass seeds was of great importance to agriculturists. He believed that they had a great many weeds in their grass, and recommended that the whole subject should be thoroughly considered. They could sow barley much thinner than wheat. He referred to the bad season with regard to the thinness of the crops. The lecturer, he said, had named 45lb. per bushel as the minimum weight for oats; he would have some difficulty in always selecting that; 40lb. was considered a pretty good weight. With a previous speaker, Mr. Cox, he did not think that the best samples of seed invariably produced crops of the best quality. Change of soil and other circumstances had to be taken into consideration. Regarding couch grass he did not think that they really had any business to burn any couch. He thought that if the land were properly managed, if they had any harvest, they could get rid of the couch by ploughing. On some farms not a bit was ever burnt; if it were allowed to rot it would be more beneficial to the land than if it were burnt.

Professor BUCKMAN, in the course of his reply, said that some questions of a scientific character had been put to him, to answer which would involve a longer lecture than he had already given them. In the first place he coincided with some remarks made on the Spalding wheat; he had seen wheat of a capital quality degenerated after three or four years, so much so that it might, in fact, be called by another name. Some wheats altered very much in colour. A great deal depended upon the soil and other circumstances connected with the cultivation. He had endeavoured to impress upon them the importance of paying attention to certain facts connected with science; they must have regard to them; they must look a

them fairly in order to get the best results; in order to get all the knowledge they could connect with the cultivation of plants. If they wanted good stock they looked carefully to the animals for breeding purposes; in like manner they made careful selections with regard to seeds for the propagation of plants. One of the speakers had stated with regard to oats, that he sowed some very thickly, and had all the better crop as a consequence. He (Professor Buckman) believed that this was sometimes the case. If they were late with sowing he was quite sure that it was necessary to put in all the more seed. It was important that all thin seeders should be up to the time; they must not be behindhand. Regarding the statement that white oats were sown, and that a crop of barley came up, all he could say was that he did not quite understand it (laughter). He had never yet succeeded in effecting such a change. He did not in the least dispute the evidence before him, it being given on the best authority; but he should certainly like to know something more about the matter. He did not think that white oats could under any circumstances change into barley: *non vice versa*. Again, it was stated that couch if cultivated at the proper time would grow into wheat. He did not think so. Science had done much; but there was always some source of error. Quoting from a pamphlet of his own containing some observations on seed, he stated that in a single sample of seeds he found 7,840 weeds; in a single pint he got 70,400. He calculated—taking this fact as the basis—that in a dozen pints of cloverseed required for an acre there would be 844,800 weeds. 17½ weed plants to the square yard were, he thought, enough to crop the ground. Weed seeds had such a faculty for growing, that they ever survived all the punishment given them. From experiments and calculations such as these he had pointed out they would see that they sowed most of their weeds; they would come to the same conclusions that he had done. He was on one occasion much struck by the wild camomile in a turnip-field; he could see nothing but camomile. The wild camomile was a pestiferous weed. Upon diligent inquiry, he found two or three camomiles had grown on the manure used for the ground. A single flower would produce 150 seeds. Two or three plants growing on a dung mizen would produce sufficient to crop a field with weeds. Here was indicated one of the ways of propagating weeds. Professor Buckman referred to the evils of dirty seed, expressing his opinion that it was now utterly impossible to get seed in the market as dirty as that sold say twenty-five years ago. Farmers, he said, who had looked into these matters, had become scientific men: they would not buy cheap and nasty seed. He recommended that they should burn rather than sell their noxious seeds. Regarding the subject of grasses, it was, he thought, a very wide one; and time had precluded his entering upon it. He did not, in fact, know a subject that was more interesting. He would advise the gentleman who had introduced it to go on with his studies: he evidently knew something about it. He (the lecturer) had made portraits of the various grasses; he had counted the number of seeds; he had a copy of every new grass; he had some hundred drawings. It was this faculty of observation, the constant determination to make observation, that after all made the true scientific man. What was science? Why, science was only this: they put this and that together, and then they came to accurate and sensible conclusions. He hoped that he should gain some knowledge of science from the remarks which they had made. The questions they had asked had set him thinking. They wanted to put all the facts together. They had very kindly expressed their satisfaction with his lecture. This was the first time he had come amongst them. He believed they were hearty and sincere in what they had said of him; and he hoped they would not make this the last time of his appearing before them. He hoped to come again, and that on that occasion he should not run away so soon.

Mr. W. FOOKES moved a vote of thanks to the Professor; and this was carried with acclamation.

The CHAIRMAN mentioned that it had been proposed to have an analysis of manures. The question had been fully discussed. But the Milborne St. Andrew Club were going to have an analysis also; and perhaps they would supply the Blandford Club with copies of the results, thereby saving expense. Probably the same manures would come under analysis at Blandford as at Milborne. He would suggest that a prize should be given for excellence in general root crops, and offered himself £5.

THE BREEDING OF DEVONS.

At a meeting of the Melplash Agricultural Society Mr. JOHN PITFIELD, of Symondsburry, read the following paper:— I will not pause to consider the locality from whence this beautiful and symmetrical breed was first derived, as I intend to confine my remarks to what comes under my own observation. It is probably true that at one time they were to be found only in one part of Devonshire, though now it would be absurd to imagine there are no good and pure animals out of the county whence they take their name. We have only to visit our agricultural shows to prove there are many choice herds of Devons not only in Dorsetshire but in several other distant counties. We must not, on the other hand, believe that everything that is called a Devon necessarily is one, for every little animal in a market or fair is often, if not generally, pointed out as one, because it is red and very small. That there are small Devons I do not attempt to deny, but that there are also fine weighty ones I think you will all allow. The size does not so much depend on the breed as the management, as I hope to prove to you by and by. I maintain that a good Devon can be, and must be, a fine "proofy" cow, which gives a good quantity of unusually rich milk; and I maintain that the oxen which earn money, and whilst at work grow into money more certainly than any others, are Devon oxen. I do not wish to make a bare assertion; we are practical men considering a practical subject, and I will endeavour to prove my statements. If there be no truth in what I say, let me ask why buyers come, not merely once, but again and again, to obtain steer calves in this very neighbourhood? They will soon be here again for another supply, for which they are glad to give a good price; so if any gentleman doubts my assertion I refer him to these annual purchasers. I know there are many—I dare say some now present—who will allow the hardy "proofy" quality to which I have alluded, but will add that the Devons are not the dairyman's cows, and therefore I repeat that a Devon need not be a little fat red cow which gives a very little milk, nor yet a great one which gives little or no milk. I believe the reason why Devons generally are supposed to be so small and such indifferent milchers, is that the principal breeders of the pure cattle have confined their attention too much to quality and symmetry, to the neglect often of those more important points, size and milk. They breed to sell or show, and therefore cultivate only those qualities that are pleasing to the eye. There are also some parts of Devonshire where, in consequence of climate or soil, we could only expect to meet with small animals of any breed; but that can be no reason why the owner of a herd, under different circumstances, should not succeed in obtaining a different class of animal. I do not intend to say anything about show stock, wishing to speak only of Devons as they are on the farm, paying as they do a very important portion of the rent. The pocket is the judge we have to encounter, and I hope to prove that this breed is well worthy the attention of any farmers' club. Therefore I will now proceed to say a few words about the Devon bull. Taking into consideration his important position, I think we must reverse the usual order of things, and give the gentleman the first place, for, with a choice cow, we can with the best of luck only get one good calf a-year, whereas with only one very good bull and 50 or 60 moderately good cows we may get 50 or 60 very good calves, which shows how particular we should be in the selection of a male animal; a few pounds extra being well expended in the endeavour to obtain a promising lot of young stock. My experience leads me to say, avoid a very fat bull, and especially an old one. If you trust to the former you will probably go short of calves; if to the latter you will find your stock smaller than you would wish. I would select, then, a bull not more than four years old; if a yearling he must not be worked too hard, lest his growth and natural good qualities should run the risk of being checked, or of never becoming fully developed. I am always very particular never to use a bull from a bad milcher, which I consider a most important matter; however good in other respects he would not be desirable for a dairy. Time will only allow me just to touch on the more important points. He

should be of a rich colour, with a good coat and skin, a clear white nose, a full bright eye, not too short a face, crowned by a pair of nice white horns, not too heavy or coarse, wide expanse of chest, great depth of girth, and a wide straight back; the tail well set on good hind quarters, no ugly hollows behind the shoulders or slack behind the ribs. I may mention that as with bipeds so with bulls, a bad temper seems hereditary; therefore it is highly requisite to use a good-tempered animal. His proper place, for various reasons, is a stall or loose box, as then many accidents may be avoided, and a great deal more be made of him than if he ran loose with the herd, which, considering the difficulty of finding and the price we have to pay for a really good animal, is of great consequence. Though a great believer in his wonderful "proofy" qualities and good constitution, I do not expect him to thrive without proper treatment. The food I recommend is hay, with the addition of a few beans. This I have found to answer well, whereas oilcake, I am inclined to believe, renders him to a great extent unsuitable for the purpose for which he is intended. Whilst on this part of my subject I may add that the services of a first-class bull are worth, in my opinion, at least £2 2s. The owner of such an animal honestly deserves that sum, and the money will bring good interest to the man who expends it. We are all aware that there are, or rather were, several good herds of Herefords in this county; but of late years the number is certainly decreasing, in some instances being replaced by Devons, which fact bears out my view that they are more suited to this locality; and I think I may safely venture to back my favourite breed, for dairy purposes, against the choicest herd of the other sort that you can mention. I will conclude this portion of my subject by repeating what a farmer in the neighbourhood told me only a short time since. He keeps a dairy of cross-breeds, and has tried both a Hereford and Devon bull; and he assures me the latter answers his purpose much the best in every respect. So, gentlemen, with this strong evidence I will leave well alone, and proceed to speak of the Devon cow; and as many of the remarks already made on the selection of the bull will apply to the cow, I will not repeat them, except to remind you she should possess size and quality. I insist on quality, as I find the better bred the cow the richer the milk. We all know that the quantity is no criterion of the quality, and, as the dairyman requires butter and not "sky-blue," it is evident that quality is of greater moment. As regards the colour of the cow, of course she must be red. I have no objection, however, to a little white before the udder. Some persons do not dislike a kind of yellow tinge with the red, but I am inclined to think that colour no indication of strength of constitution. I will not dwell on the points of the cow, but pass on to consider her general management. I believe about the greatest fault we commit is in the treatment of our in-calf cows and heifers. Devons will stand poor living as well and I think better than any other breed—indeed I have invariably found that the best bred animals keep in better condition on the same allowance than half-bred, but no in-calf beasts should be kept entirely on straw. I highly approve of good straw keep; it is healthy and necessary; but I am fully convinced that the outlay in the shape of a little cake is fully repaid to the farmer, both by the animals and the manure; and even if the dairyman himself paid half the cost he would not be the loser, as it necessarily follows that when beasts calve down poor it must take them some time to get up their own strength and condition before they can do justice to the dairyman. I like my cows to get an early bite of grass, and, therefore, though I am blessed with no water meadow, I always contrive to lay up as much pasture land as I can spare for their early use. With reference to barreners I arrange to take my own away from the dairy about the 11th October, and even then I find that they are very good beef. Quality tells again here. When offered for sale the superiority of good beasts is immediately shown, for we must all have remarked how quickly the best animals are disposed of for best prices at an auction. A great improvement is manifest in late years with regard to the

provision of shelter for cattle; but there is room for still more. Money expended in the erection of stalls is not lost. Warmth economises food, and we must all be aware how much hay is wasted by being thrown down before cattle in the fields. Time will not admit of my going into statistics; but when I say that no dairies in this neighbourhood are let at a higher rent than my own and other good Devon herds I hope I bring forward a strong argument to prove the statement that Devons can be, ought to be, and are suitable and good for dairy purposes. As regards heifers I would say that as a rule they ought not to calve under three years old. Though I adopt the common practice of selecting a few of the larger ones, and allowing them to calve at two years old, I often find that a heifer of two years gives more milk than when she is three years old; but at four years I frequently find that she will answer the expectation formed when she first calved. I need not say that in-calf heifers should be placed where they are well under the eye of master or man, and that they should be kept better than cows. My dairyman usually takes them as cows. Two-year-old barren Devon heifers of course will do well upon straw, and, if the straw be good, will require no artificial help. Yearlings I like to see in loose boxes, where they are to be had. I would give good hay, water, and a little corn. I find that a mixture of crushed beans, oats, and flaxseed answers well, and by using it I save my roots. Young calves of course require care and attention. I generally retain almost all my calves, binding the dairyman not to sell any without my sanction, and allowing him a quarter's rent of a cow for each calf, finding the corn myself, which is generally cracked beans, as I have discovered nothing better. When the calves are turned out I keep them well during the first year, and still continue the beans in the proportion of about one pint to each calf. Those dropped after March I do not turn out at all during their first year, and by this treatment I find that when spring comes round they have nearly overtaken those summered out of doors. These gentlemen, are about all the remarks I can offer this evening; and, in conclusion, if in 1808 it could be said that the Devons "are an important breed of animals, active at work, and their aptitude to fatten is unrivalled," I feel quite satisfied that the statement can be repeated in 1870; and, as a proof of the truth of a great deal that I have said, I shall be very happy to show any of you my own herd, and to allow you to form your own conclusions. In the meantime, if you will kindly pull my paper to pieces as much as you like, I shall be pleased, as I shall then have reason to think that some of my remarks are worthy of notice, and that the only object I had in view will be obtained, which was to create a discussion which may tend to help us to pass not merely a pleasing and convivial, but an improving evening.

Mr. JOHN POPE, the Chairman, said Mr. Pitfield had challenged them to prove that a mixed-bred animal would give as good butter and milk as a Devon. He (the chairman) considered there was no doubt Mr. Pitfield was wrong as regarded the quantity of milk; without question the cross-bred gave more milk than the pure Devon. They all knew they could not grow a crop of corn without straw, and he could not see why the cross-bred should not give as much and as good milk as the Devon. A person who owned an excellent herd of Herefords would no doubt give a direct contradiction to any assertion that Mr. Pitfield had a superior dairy to his. He (the chairman) believed there was no dairy in the neighbourhood to surpass that gentleman's—he alluded to Mr. Trask, of Mapperton Marsh. He differed from the lecturer as to the treatment of calves, and considered the harder they were bred the harder they would be in after life, and a better cow would be produced. The same rule applied to lambs. He did not mean to say they should stop them, but by too high treatment the cows were often deformed and weakly. The best and hardest cows were those bred in the open air, and which lived without much artificial food, such as cake, corn, and beans. He thought if they were kept upon hay and grass only the cows would be better and more useful than those which were kept in houses and fed with corn, cake, and other things. They might not reach that perfection of symmetry which some persons aimed to produce, but they would be more hardy. They all knew that a man might be acclimatised to almost anything, and so with calves. They must approach this question from a practical and not a theoretical point of view—as farmers keeping animals for profit, and not as gentlemen amateurs who kept a few "fancy" beasts in their parks. Where

they as agriculturists had to keep three or four cows the amateur might only run one; and it was a different thing to keep beasts for profit instead of pleasure.

Mr. TRASK was happy to have heard Mr. Pope's complimentary remarks respecting his dairy of Herefords. It had ever been a pleasure and his study to show good stock, and he had been moderately successful. With regard to the treatment of calves, he might say he had never been in the habit of giving them corn in houses until last year, when keep was short, and even then he had difficulty in getting them to eat from the troughs. Last year he gave the later calves a little corn, just as they were about to be turned out. He believed with the chairman that the hardier calves were kept in their younger days the stronger they would be when turned out. With respect to the age at which to breed from heifers, it had been his practice to commence at two years old; and he found as a rule the calves were larger than when the heifer did not begin till the third year. Every year told upon a cow; and he thought it advantageous to commence breeding as early as possible. He understood Mr. Pitfield to say, that after a person once bought Devon calves they would not care to have anything else; but he (Mr. Trask) had had people come to his farm and refuse to purchase any except they had a white mane (laughter). That he considered spoke well for his herd.

Mr. A. J. PITFIELD could not quite agree with Mr. Trask as to keeping calves too hard. He liked to keep them in growing condition and in good order; but he differed from the lecturer as to housing calves. It made them tender, and, although they looked well in the warm summer weather, they required to go into the box again directly the cold was felt, and oftentimes the result was that the farmer had a number of slipped calves. He advocated that they should have a shed into which they could go at will, and that they should be kept in growing condition. He considered that the great point in which farmers were at fault was the selection of the bull from which to breed. It was a singular fact, and no doubt Mr. Warren and other Devon and Hereford breeders would confirm the remark, that heifers would invariably take after the sire and the steers or bulls would take after the dam. The same remark applied to sheep—a good chivver always resulted from a good sire.

Mr. DAVY agreed with every remark that had fallen from Mr. Trask relative to the Hereford breed of cattle, and none of the arguments which Mr. Pitfield had brought forward would induce him to depart from his favourite breed. The Herefords would live in any locality; they were hardy and produced good milk and butter; and his dairyman would say none could surpass them. Their value, of course, depended very much upon the management of the owners. For his own part he generally reared a few more calves than he required for the dairy, and from these he selected the best milchers, so that if any heifer did not produce sufficient good milk he had her turned out. As regarded the sire they should be particular in the selection of a good animal from a well-known superior cow. He had lately taken a trip in Herefordshire and had selected a bull from an 80-cow dairy; this he intended to breed from for dairy purposes. He was of opinion that they could not, as a rule, obtain the greatest quantity of milk from the most fleshy beast. He had a half-sister to the steer which won first prize in the Hereford class at the Christmas show in London, and if any gentleman present was to see her he would say she was not worth £10, but she was a splendid animal and had reared two admirable calves. He had 31 cows in his dairy, and could safely say that not one of them had ever tasted corn, cake, or artificial food of any kind; they were fed entirely on hay and grass, and very often they could be grazed to over 50 score in weight. The Herefords could be grazed to great weight, at little expense, which was, of course, an advantage to the farmer. Mr. Pitfield had the advantage of him at the last Melplash show, but he did not think that gentleman could say his beasts were fed only on hay and grass.

Mr. J. PITFIELD: They had nothing more whatever.

Mr. DAVY: But what was their condition when heifers?

Mr. J. PITFIELD replied that his yearlings kept indoors thrived on half the amount of corn that others did.

Mr. DAVY said his heifers were fed on hay only, and he could raise them well and make a good price for them. But he repeated that Mr. Pitfield had the advantage of him at the Melplash show, and as he had heard that that gentleman is

tended to retire from competition this year he hoped he would reconsider his determination and allow him (Mr. Davy) to have yet another "chie" at him, at all events.

Mr. J. PITFIELD said what he had intended to do at the next Melplish show was to exhibit extra stock in all classes for which prizes were offered by the society. He was going to do this for the purpose of just "comparing notes." But as it was Mr. Davy's particular wish to compete with him, he would afford him the opportunity.

Mr. M. G. LEECH did not intend to take any part in the discussion of the evening, but one remark which fell from Mr.

Davy caused him rather to open his eyes. That gentleman remarked that he always bred a few more calves for the dairy than were required, and that he culled out the good ones, and those which were not up to the mark he turned out. Now he (the speaker) was partial to Herefords, and he was sorry to say he recently bought one from Mr. Davy. He supposed it was one that was turned out as unfit for that gentleman's dairy.

Mr. DAVY replied that Mr. Legge ought to have exercised better judgment; the heifer was not good enough for him to keep, so he sold it.

THE ROYAL DUBLIN SOCIETY.—THE SPRING CATTLE SHOW,

The opening show of the year was held as usual on the Society's premises in Kildare-street, to which additional space has been lately made by the purchase of some adjoining property, wherein the pigs were exhibited. This outlying accommodation afforded more room in Shilburn Hall for the implements and machinery, the breeding and fat cattle occupying the Agricultural Hall. This, the thirty-ninth show, was short of last year's entry by about eighteen; the numbers in 1869, being 206 of all ages and sexes, while this year 188 was the total. The quality of the stock, however, was fully equal, and probably the deficiency may be attributed to the absence of English exhibitors. But if the English Shorthorn breeders declined doing more, as in the case of Mr. Booth, than showing themselves, the implement makers mustered in great strength, thirty-five of whom from various districts crowded the halls with their several stands, so that it is presumed they still find it their interest and profit to visit the Island of Saints.

The yearling Shorthorn bulls numbered 122 highly bred animals, but though it must be confessed some of them were of no great merit, their general character was creditable. After a considerable time spent by the judges in weeding out and selecting their favourites, their awards settled down to placing Mr. Chaloner's Sir Leopold first. This young bull is by Sovereign (27588)—to be noticed with all his honours further on—out of Medora by Ravenspur (20628). Sir Leopold was bought in as a calf at the last sale of the Kingsfort herd for 12 guineas, and has paid well for his retention; he much resembles his sire, has a grand back and loin, crops well blended into the level back, is of fine proportions, and has a capital coat. His second is Mr. E. J. Smith's Heir of Lothian by Chief of Lothian (21417), out of Heroine, by Hero of Thorndale (18061); a fine red, with a commanding carriage, good crops, running into a straight level back, well sprung ribs, good fore and hind quarters. Lord Carrick's Knight of St. Patrick was put third; he is highly bred, being by Lord of the Empire (24442), out of Lupine the Twelfth, by Master Harbinger (18852); has a fine coat of hair, good crops, well backed, good ribs and ends. A fourth prize went to Mr. Bolton's Earl of Courtown by Duke of Marlborough, out of Doubtful, a grey Gauntlet cow. The high commendations were Mr. Bolton's Duke of Marlborough, and Mr. E. J. Smith's Cavendish; while the commended bulls were Mrs. Chaloner's Belmore by Sovereign; Mr. Drummond Dunlop's Harry; Rev. Mr. Mantray's Knight Grand Cross; Mr. James Moffat's Senator; and Mr. Shirley Montgomery's Royal Standard.

Many good animals stood in this section, some of these not in condition, but all well bred; as the most ragged amongst them may turn out serviceable to Irish farmers to improve their dairy and store stock.

The two years old section, numbering thirty, was, on the whole, the best class of that age hitherto shown. Mr.

Smith leads the way with the Earl, a scion from the Kingsport herd by Ravenspur (20628), out of Village Rose, and half brother by the dam's side to Mr. Chaloner's grand prize bull, Sovereign; a gay well-topped bull, with many good points, and likely to turn out a formidable competitor and serviceable stock bull. The Dey of Algiers by Knight of the Empire, out of Frank, a white Chieftain cow, stands next. His owner Mr. Moffet, of Ballyhiland, for many years has been devoted to Shorthorn breeding. The Dey of Algiers is of great substance, a little wanting in the crops, but he has a capital back, well-developed ribs, and good ends. Captain Cosby, Stradbally Hall, was put third for Colonel Frank, a Thornville bull by Agamemnon (23278), out of Fanny the Eighth, full of substance, symmetry, and quality. High commendations went to the Lord-Lieutenant, for a very substantial bull The Doge, and to Mr. Meadows, for Major Frank by Agamemnon, out of Fanny the Sixteenth, by Fugleman; the Major being a substantial serviceable bull, of fine symmetry and quality. Mr. A. Roll's Viceroy by Felix, and Mr. W. Humphrey's Bryan O' Lynn, were commended.

The three years old bulls and upwards contained sixteen entries, some of which have been distinguished before now; amongst them stood Mr. Chaloner's famous Sovereign, which now is first in the section, and the winner for good and all of the 150 Sovereign Railway Cup, and also the winner three times out of four of the Towneley Plate; he has never been beaten, being first as a yearling, and the winner of the Towneley Plate at this show, 1867, as the best breeding animal, male or female, in the yard. He was shown first in 1868 as a two-year old, and the winner of the Railway Cup, as the best bull over two and under five years old, but he lost the Towneley Plate in favour of Mr. Meadows' renowned Boliver. In 1869 he took the first prize in his class, the Railway Cup, for the second time in succession, and the Towneley Plate; in the same year, at the Tralee Royal, he took first place in his class, and the Purdon Challenge Cup, and is now the first bull in his class, the winner for the third and last time of the Railway Cup, and for the second time in succession of the Towneley Plate. The next in honour is Mr. Smith's fine bull Lictor, first in his class, and Railway Cup bull in 1867; in the same year first in the class at the Royal Society's show held in Dublin, and again at the Royal held in Londonderry in 1868, first in his class, and winner of the Purdon £50 Cup. Sir Robert Paul was put third for Knight of the Empire, from the Stack-house herd.

Eleven yearling heifers formed the next section, and never at any Irish show were there seen so many beautiful creatures, so level and good were they that the judges never had such a puzzle, particularly with the first and second. They weeded out the third and fourth, and then the contest lay between Mr. Meadows' Chaumontel by Agamemnon, out of Chaumontette by First Fiddle, and

Mr. Smith's Gertrude by his prize bull *Lictor*, out of *Gaiety* by *Jasper*, and this ended at length in *Chaumontel* being put first, and justly so. She is of great substance, level, strong, and beautifully backed, and nothing could surpass her coat. Gertrude of course came second, and unquestionably is a gem, but she was smaller and more delicate than *Chaumontel*. Mr. J. G. Grove, Castle-grove, whose herd is so famously and favourably known for many years, was put third for *Nepenthe*, who possesses grand substance and symmetry, but was tender on her feet. She is by *British Crown*, (21278), out of *Norman Lady* by *Sir Roger* (16991). The fourth went to Mr. Wm. Johnson, Prumplestown House, Carlow, for *May Rose* by *Prince of Rocklands*, out of *Amy* by *Khoinoor Diamond*. High commendations were given Mr. Meadows' *Polly Hopkins*, and Mr. Gumbleton's *Emma*, both exceedingly nice heifers.

Of two-year-old heifers in-calf or producing a live calf within twelve months, there were but three, Mr. Bolton taking the lead with *Ally Gwynne* by *Guy Gauntlet* out of *Moll Gwynne*, a sweet handler, with fine bosom, good back and loins, well ribbed, and a fine coat of hair. *Sir R. Paul's Olivia* by *Dr. Collins*, out of *Octavia* came next.

The three-year-old heifers also numbered but three, of which *Major Hamilton's Harmony* was pronounced to be the best. She is by *Duke of Montrose* (21599), out of *Mayflower* by *Duke of Oxford* the Fifth, and a fine showy cow, with indications of wealth about her. *Sir Robert Paul's Bonnie Lass* by *Patriarch*, out of *Beanty*, was put second.

The cows of any age numbered again but three, and there could be no mistake in putting *Major Hamilton's Merry Eyes* first; a full sister to his prize heifer in the previous section. Mr. Smith (*Little Moyle*) took the second degree with *Miss Matilda*, which occupied the same position last year as a three-year-old heifer, and is now a fine shapely cow.

Of *Herefords* there were but four yearling bulls; Mr. Pollock (*Mountainstown*) taking the prize and also a commendation; Mr. Kearney a high commendation, and Mr. Reynell a commendation.

Of aged *Hereford* bulls there were but three, Mr. Kearney taking the prize and Mr. Seally a commendation for another but bred by Mr. Kearney; and Mr. Kearney had it all his own way in yearling and two and three-year-old heifers and cows. This breed of cattle is not much encouraged by the Irish breeders or Societies.

Of *Polled Angus* cattle there were but two bulls and three females, Mr. Owen taking the only prize awarded; and of *Devons* there was but one bull.

Kerries mustered comparatively strong. There were five bulls of various ages in competition with each other, three two-year-old heifers, ten three-year-old heifers, and ten cows, but uneven in size and quality.

Of the west *Highlands* and *Alderneys* there were very few.

Of fat cattle, about seventy head of all breeds, sexes, and ages were exhibited, some of which were prime, but the greater number would take more time to ripen.

There are now no breeding sheep shown at this time of the year, in consequence of the endeavour to establish a good show in September, but there are entries of fat sheep, of which there were ten pens at this meeting all tolerably well finished.

The show of pigs, both black and white, was of such a superior character that there is nothing left to wish for, and it only remains to keep up their quality, and that is well done by introducing fresh blood from time to time; of *Berkshires* there were over 30 pens, and of the white breeds 16 pens.

The exhibition of poultry embraced all the most approved varieties, and was as fine and as good as it is pos-

sible they could be. The poultry occupied 218 pens. The pigeons were really beautiful and in splendid plumage, as shown in pairs in 61 very neatly got up cages. On the whole, the show was a decided success. All that is now wanted is sufficient space to exhibit the implements and machinery, and for which arrangements are in progress by the purchase of some adjoining premises.

The following were some of the principal implement firms which put in an appearance: *McKenzie and Sons*, of *Dublin*; *Messrs. Howard*, of *Bedford*; *Jack and Sons*, of *Maybole*, *Ayrshire*; *Ashby*, *Jeffery*, and *Lake*, of *Stamford*; *Jas. Eastwood*, of *Blackburn*, *Lanc.*; *Messrs. Ritchie*, of *Ardee*, *Louth*; *Le Butt*, of *Bury St. Edmunds*; *Morgan*, of *Dublin*; *Fawcett*, of *Kilcullin*; *Smith* and *Westwood*, of *Dublin*; *Rollins*, of *London*; *Richmond* and *Norton*, of *Liverpool*; *Bolton* and *Co.*, of *Norwich*; *Penny*, of *Lincoln*; *Mitchell*, of *Manchester*; *Kenan*, of *Dublin*; *Houghton* and *Thompson*, of *Carlisle*; *Thomas* and *Taylor*, of *Manchester*, &c.

On the evening of Thursday the members of the Society and their friends dined together in the Exhibition Palace. Lord Clancarty presided in the absence of the Lord-Lieutenant; and Mr. Clayden, for the judges, said that many of the animals exhibited at the show would do credit to any Royal show in England. He congratulated the Irish stock breeders on the improvement in the quality of the stock latterly sent to England from Ireland.

JUDGES.

SHORTHORNS.

J. Clayden, Littlebury, Saffron-Walden.
G. Drewry, Holker Hall, Newton-in-Cartmel.
J. Wood, Stanwick Park House, Darlington.

HEREFORDS AND DEVONS.

T. Radcliffe, Wilmount, Kells.
T. Rogers, Coxall, Brampton Bryan, Hereford.
W. Tudge, jun., Adforton, Leintwardine.

MISCELLANEOUS STOCK.

J. Borthwick, Prospect, Carrickfergus.
G. Hewson, Ennismore, Listowel.
G. N. Pardon, Lisnabin.

FAT STOCK.

N. Ennis, Claremont, Julianstown.
S. Garnett, Summerset, Clonect.
B. Hall, Freeson's-row, Liverpool.

SHEEP AND PIGS.

J. Borthwick, Carrickfergus.
J. Bruce, Milton Castle, Charleville.
Seymour Mowbray, Killeany, Mountrath.
J. Smith, Moyle, Carlow.

POULTRY.

E. Hewett, Eden Cottage, Spark-villa, Birmingham.
W. G. Mulligan, Springfield, Belfast.
C. H. Peacocke.

ROYAL AGRICULTURAL SOCIETY'S MEETING

IN 1871. — The Inspecting Committee of the Royal Agricultural Society, consisting of Lord Kenmore, Mr. Brandreth Gibbs, Mr. Davies, and Mr. William Torr, visited Wolverhampton, and were met by the Mayor. The party went over the race course, the proposed site of the exhibition, and from thence to the suggested trial grounds at Showell Farm. The Committee afterwards proceeded to Stafford, where they were received by the Mayor on Tuesday evening, and taken to the show-ground on the Common. On the following morning the deputation visited the land available for the trial of implements, on the Hopton-road, which consists of about 134 acres; and afterwards went on to Shrewsbury, where they viewed the ground at Old Heath. Deputations from these three towns will attend in Hanover-square on Wednesday week, May 4th.

ENGLISH TENANT-RIGHT.—This subject has been selected for consideration at the next meeting of the Farmers' Club, on Monday, May 2nd, when it will be introduced by Mr. Henry Corbet, the Secretary of the Club, and the author of the Prize Essay on Tenant Right.

SHEEP GRAZING FOR 1870.

BY A PRACTICAL FARMER.

Profitable grazing depends very much upon the satisfactory preparation, and due resting of the land to be grazed. The manuring, the soiling, the boning and chalking, the rolling, the chain-harrowing, or other means for improving the surface of the soil of all grazing lands, as well as the drainage beneath, ought all to be done before the approach of spring. The resting of the land, the freeing it from stock, and then "laying it in" for summer grazing, are all of great value in promoting the early and nutritive growth of the grasses in the pasturage. The absence of treading, the working of the worms, and the opening of drainage-pores by frosts and changeable weather is also highly conducive to an early and luxuriant growth of grass. This is all so well known by all good graziers, and is so generally practised, that we shall take the best grazing lands as being thus prepared for the summer grazing, and proceed to give our views as to the most profitable mode of grazing them. Sheep are, upon the whole, the most profitable animals to graze upon by far the majority of lands in this country. They yield two returns, mutton and wool. The great question, the desideratum to be arrived at, is the class or variety of sheep which will yield the greatest profit for grazing. This is a wide field for discussion, and there are many "pros and cons" to be reconciled. The immense importation of wool is dead against some of our most popular breeds. The importations of wool in 1866 amounted to 235,741,101 lbs.; in 1867, to 230,305,107 lbs.; in 1868, to 249,931,714 lbs.; and in the first eight months of 1869, to 189,864,384 lbs.; thus showing a large gradual increase, and that principally consisting of fine Australian and other like wools. This has brought down the price of our home-grown fine wools very considerably. The quotations, this day, March 15th, are as follows: Southdown hoggets 1s. to 1s. 1d. per lb., half-bred do. 1s. 3½d. to 1s. 4½d. per lb., Kent fleeces 1s. 8d. to 1s. 3½d. per lb., Southdown ewes and wethers 1s. to 1s. 1½d. per lb., Leicester do. 1s. 2½d. to 1s. 3½d. per lb., Leicester and Lincoln hoggets 1s. 4d. to 1s. 6d. per lb. These figures conclusively prove which is the most profitable wool to grow. The growth or production of mutton is quite another thing. My opinion is that on a great breadth of our pastures a large-framed sheep which only produces short wool is the best sheep for yielding the heaviest weight of mutton in proportion to his age and the food he consumes. This will be found amongst the various classes of "half-breds." We have only experience in three of these breeds, or at most four; if we take the Lincoln long-wools as separate from the Leicesters; from which, in fact, they owe their improved character. We have then grazed, to a considerable extent, the following "half-breds:" hoggets the produce of the Lincoln ram and Southdown ewe; the Leicester ram and Southdown ewe; the Cotswold ram and Southdown ewe, the Oxford down ram and the Lincoln ewe, and all from equally good sources. The Lincoln ram and Southdown ewes' produce we found too varied. Occasionally a heavy long-wooled hogget appears amongst the cross-breed, and *vice versa*, a Southdown hogget is seen, and others, with all the shades of fleeces and frames between the two breeds, denoting the cross to have been too extreme in affinity. The grazing of them, including the weight of wool produced, was tolerably satisfactory; but they were too long

in coming to maturity, "too long on the land." The produce of the Leicester-cross were smaller in frame, more compact, and they arrived at maturity much sooner, but their yield of wool and mutton did not equal the Lincoln-cross. The Oxford-down ram and Lincoln-ewe cross was from my own breeding ewes. They grew up very well and distinctive, and proved well in the quantity of wool. They were grazed last season along with several hundred other half-breds, principally from the Cotswold and Southdown cross; but not with equally profitable results, some of them being the last to arrive at like maturity, all however being fatted off within the year, as were also the Cotswold half-breds. As this cross meets our approval most, we will dwell shortly upon its value. The true Cotswold sheep is the largest and best formed sheep of the large breeds we possess, and has a great propensity to fatten at an early age. He grows rapidly, and produces a good fleece of wool, of rather fine character for a long-wooled breed. It is for the most part of a closer kind than other long-wools. This, with their other characteristics, their noble carriage, expansive chests, rotund frames, capital rumps, great height, and handsome looks admirably fits them to become the sires of this extraordinary class or stock of "half-breds." It is almost out of character to witness one of these gigantic rams performing his duties amongst a flock of beautiful Southdown ewes, but the produce is eminently satisfactory. They grow up quickly and healthily, and arrive at great weights in from twelve to fifteen months. Many thousands of these hoggets are annually fatted off in the eastern counties at twelve months. They are shorn prior to sale, and will leave fleeces of from five to seven pounds' weight; the quality of their mutton is not exceeded. The weight per sheep would probably average twenty-two pounds per quarter. Those commonly shown in the pens at market will vary from 18lbs. to 28lbs. per quarter so early as in the month of March. In the spring they are much sought after by the Lincolnshire and other graziers for their summer pastures, upon which they improve rapidly, and produce large returns of wool and mutton. They are quite docile animals, partly natural, partly acquired; for the winter graziers in the eastern counties are capital sheep managers, supplying them liberally with rations of cake or corn. This the summer graziers in most instances keep up, particularly if the sheep are forward in condition, and by such means they graze a greater number of sheep per acre, which yield a corresponding profit. This is one of the best breeds for summer grazing, but the supply is limited, and therefore not generally accessible. There are, however, many other breeds well worthy of the summer grazier's notice, which he will adopt in accordance with his locality, his pasturage, and climate. To this old rule of stocking his land he need not in these modern days strictly adhere, because the almost universal use of artificial foods has changed the character of summer as well as winter grazing. Inferior pasturage will by the judicious use of these aids profitably depasture a heavier and larger kind of sheep, or fatten a larger number of smaller ones. There is no rule for stocking grass lands now, as so much depends upon the spirit and enterprise of the grazier. The great thing now required, and indeed necessitated, is to cause the land to produce the very utmost of

wool and mutton. Well, the consideration with every grazier is, how to do it. All can't graze "half-breds." Let us take Southdowns: their mutton is superlative, they are speedy fatteners, and do well on inferior pasturage, they come to good weight at an early age, much heavier than their diminutive size denotes, but they yield fleeces of light weight, and now selling at a low price. This is dead against this breed, and all similar short-woolled breeds. Take pure Cotswolds or Lincoln long-wools. They are similar in size and proportions, and yield large heavy fleeces of valuable wool; but their large frames come to extraordinary weights upon being properly fattened, which cannot be done with all the aids man can bestow upon them, at the same early age of some of the lighter-framed and lighter-woolled sheep. If early maturity is immaterial they are capital sheep for the grazier. The wool pile tells much for them. Again, take Leicesters and Kents—improved Kents, for the improved Kents are becoming apt feeders. Both these breeds are exceedingly well adapted to graze sweet pasturage of medium quality, and are ready fatteners, leaving fair fleeces of excellent long wool. They are good, quiet grazers, and improve rapidly on fair pasturage, even without artificial aids. Their weight of mutton is good and quality excellent, possibly too great a

proportion of fat to lean meat. The Shropshires have become a valuable breed, and yield wool of like weight and quality with the half-breds named above. They are excellent fatteners, and well adapted for hilly pasturage or medium low-lands, and come to satisfactory weights. The mutton is very superior. The large Hampshire Downs are of similar size and quality, but yield less wool and greater weight of offal, not such quick feeders, but are better adapted for breezy downs. The Oxfordshire Downs have become popular owing to a combination of good quality. They possess large compact frames, are apt fatteners, yield large bundle fleeces of superior wool, come early to maturity at great weights. These various breeds are, I believe, the most prominent and best kinds for summer grazing, but I name them not in disparagement of any other kind which are more especially adapted to local districts; and in the general term Leicesters I include all shades of the breed from the large border Leicesters to the smallest of the class. Graziers have only to look closely into these matters to ascertain for themselves what is their best course. Meat appears to be the most profitable farm-produce at the present time, and no doubt will meet with ready and proper consideration by every intelligent grazier.

AVERAGE PRICE OF WHEAT PER QUARTER FOR TWO HUNDRED AND SEVENTY YEARS.

Year.	£	s.	d.	Year.	£	s.	d.	Year.	£	s.	d.	Year.	£	s.	d.	Year.	£	s.	d.
1600.....	1	17	8	1645.....	2	11	3	1690.....	1	10	9	1735.....	1	18	2	1780.....	1	16	9
1601.....	1	14	10	1646.....	2	9	8	1691.....	1	10	2	1736.....	1	15	10	1781.....	2	6	0
1602.....	1	9	4	1647.....	3	5	5	1692.....	2	1	5	1737.....	1	18	9	1782.....	2	9	3
1603.....	1	15	4	1648.....	3	15	6	1693.....	3	0	1	1738.....	1	11	6	1783.....	2	14	3
1604.....	1	10	8	1649.....	3	11	1	1694.....	2	16	10	1739.....	1	14	2	1784.....	2	10	4
1605.....	1	15	10	1650.....	3	8	1	1695.....	2	7	1	1740.....	2	5	1	1785.....	2	3	1
1606.....	1	13	0	1651.....	3	5	2	1696.....	3	3	1	1741.....	2	1	5	1786.....	2	0	0
1607.....	1	16	8	1652.....	3	4	0	1697.....	2	13	4	1742.....	1	10	2	1787.....	2	2	5
1608.....	2	16	8	1653.....	1	11	6	1698.....	3	0	9	1743.....	1	2	1	1788.....	2	6	4
1609.....	2	10	0	1654.....	1	3	1	1699.....	2	16	10	1744.....	1	2	1	1789.....	2	19	9
1610.....	1	15	10	1655.....	1	9	7	1700.....	1	15	6	1745.....	1	4	5	1790.....	2	14	9
1611.....	1	18	8	1656.....	1	18	2	1701.....	1	13	5	1746.....	1	14	8	1791.....	2	8	0
1612.....	2	4	4	1657.....	2	1	5	1702.....	1	6	2	1747.....	1	10	11	1792.....	2	3	0
1613.....	2	8	8	1658.....	2	17	9	1703.....	1	12	0	1748.....	1	12	10	1793.....	2	9	3
1614.....	2	1	8	1659.....	2	18	8	1704.....	2	1	4	1749.....	1	12	10	1794.....	2	13	3
1615.....	1	16	8	1660.....	2	10	2	1705.....	1	6	8	1750.....	1	8	10	1795.....	2	15	2
1616.....	2	0	4	1661.....	3	2	2	1706.....	1	3	1	1751.....	1	14	2	1796.....	2	18	7
1617.....	2	8	8	1662.....	3	5	9	1707.....	1	5	4	1752.....	1	17	2	1797.....	2	12	3
1618.....	2	6	8	1663.....	2	10	8	1708.....	1	16	10	1753.....	1	19	8	1798.....	2	10	4
1619.....	1	15	4	1664.....	2	16	0	1709.....	3	9	9	1754.....	1	10	9	1799.....	2	6	11
1620.....	1	10	4	1665.....	2	8	10	1710.....	3	9	4	1755.....	1	10	1	1800.....	5	10	5
1621.....	1	10	4	1666.....	1	12	0	1711.....	2	8	0	1756.....	2	0	1	1801.....	5	15	11
1622.....	2	18	8	1667.....	1	16	0	1712.....	2	1	2	1757.....	2	13	4	1802.....	3	7	9
1623.....	2	12	0	1668.....	1	15	6	1713.....	2	5	4	1758.....	2	4	5	1803.....	2	17	1
1624.....	2	8	0	1669.....	1	19	5	1714.....	2	4	9	1759.....	1	15	3	1804.....	3	0	5
1625.....	2	12	0	1670.....	1	17	0	1715.....	1	18	2	1760.....	1	12	5	1805.....	4	7	1
1626.....	2	9	4	1671.....	1	17	4	1716.....	2	2	8	1761.....	1	6	10	1806.....	3	16	9
1627.....	1	16	0	1672.....	1	16	5	1717.....	2	0	7	1762.....	1	14	8	1807.....	3	13	1
1628.....	1	8	0	1673.....	2	1	5	1718.....	1	14	6	1763.....	1	16	2	1808.....	3	18	11
1629.....	2	2	0	1674.....	8	1	0	1719.....	1	11	1	1764.....	2	1	6	1809.....	4	14	5
1630.....	2	15	8	1675.....	2	17	5	1720.....	1	12	10	1765.....	2	8	0	1810.....	5	3	3
1631.....	8	8	0	1676.....	1	13	9	1721.....	1	13	4	1766.....	2	8	1	1811.....	4	12	5
1632.....	2	13	4	1677.....	1	17	4	1722.....	1	12	0	1767.....	2	17	4	1812.....	6	2	8
1633.....	2	10	0	1678.....	2	12	5	1723.....	1	10	10	1768.....	2	13	9	1813.....	5	6	6
1634.....	2	16	0	1679.....	2	13	4	1724.....	1	12	10	1769.....	2	0	7	1814.....	3	12	1
1635.....	2	16	0	1680.....	2	0	0	1725.....	2	1	1	1770.....	2	8	6	1815.....	3	3	8
1636.....	2	16	0	1681.....	2	1	5	1726.....	2	0	10	1771.....	2	8	7	1816.....	3	16	2
1637.....	2	13	0	1682.....	1	19	1	1727.....	1	17	4	1772.....	2	12	3	1817.....	4	14	0
1638.....	2	17	4	1683.....	1	15	6	1728.....	2	8	5	1773.....	2	12	7	1818.....	4	8	8
1639.....	2	14	10	1684.....	1	19	1	1729.....	2	1	7	1774.....	2	14	3	1819.....	3	12	3
1640.....	2	4	8	1685.....	2	1	5	1730.....	1	12	5	1775.....	2	9	10	1820.....	3	7	11
1641.....	2	17	1	1686.....	1	10	9	1731.....	1	9	2	1776.....	1	19	4	1821.....	2	16	2
1642.....	3	0	2	1687.....	1	2	4	1732.....	1	3	8	1777.....	2	6	11	1822.....	3	4	7
1643.....	2	19	10	1688.....	2	0	10	1733.....	1	5	2	1778.....	2	3	3	1823.....	2	13	5
1644.....	3	1	3	1689.....	1	6	8	1734.....	1	10	9	1779.....	1	14	8	1824.....	3	4	0

GAME LAW CONVICTIONS.

RETURN to an Address of the House of Commons, dated 7 March, 1870; for

The Number of CONVICTIONS under the GAME Laws in separate COUNTIES in *England and Wales*, distinguishing the Number in each County; and of the CONVICTIONS, under the Act 25 & 26 Vict. c. 114, intituled, "An Act for the Prevention of POACHING," in separate COUNTIES in *England and Wales*, distinguishing the Number in each County for the Year 1869.

CONVICTIONS UNDER THE GAME ACTS FOR THE YEAR 1869.

Counties.	Total.	Summary Convictions.				On
		Trespassing in Day-time in Pursuit of Game.	Night Poaching, and destroying Game.	Illegally Selling or Buying Game.	Poaching Act (1862).	Indictment.
ENGLAND.						
Bedford	176	152	11	...	12	1
Berks	131	109	4	1	5	2
Bucks	307	232	7	...	16	2
Cambridge	110	92	11	...	6	1
Chester	368	276	35	...	48	9
Cornwall	125	92	1	1	31	...
Cumberland	103	94	...	1	8	...
Derby	353	265	38	3	39	8
Devon	224	206	18	...	...	...
Dorset	234	215	1	...	15	3
Durham	379	321	19	9	30	...
Essex	310	298	3	...	9	...
Gloucester	209	193	13	1	2	...
Hereford	167	145	9	...	20	...
Herts	302	259	23	...	15	5
Huntingdon	64	60	2	...	2	...
Kent	260	214	17	2	25	2
Lancaster	547	470	31	...	44	2
Leicester	252	226	9	...	15	2
Lincoln	227	193	11	3	20	...
Middlesex	131	127	4	...	...	...
Monmouth	87	52	4	...	11	...
Norfolk	266	233	8	...	22	3
Northampton	223	212	3	...	5	2
Northumberland	176	138	5	...	33	...
Nottingham	254	218	10	...	26	...
Oxford	151	128	9	2	9	3
Rutland	19	19	...	...	...	...
Salop	254	203	10	3	33	5
Somerset	380	331	20	2	27	...
Southampton	322	283	7	...	25	7
Stafford	400	306	22	...	69	3
Suffolk	319	298	13	4	3	1
Surrey	90	85	...	1	4	...
Sussex	182	149	6	2	19	6
Warwick	182	144	17	...	16	5
Westmoreland	63	59	3	...	1	...
Wilt	216	201	8	...	7	...
Worcester	156	127	12	...	11	6
York	1,066	900	56	4	105	1
WALES.						
Anglesey	11	11	...	...	...	...
Brecon	31	26	5	...	...	...
Cardigan	27	24	2	...	...	1
Carmarthen	41	40	...	1	...	...
Carnarvon	37	35	2	...	...	...
Denbigh	117	101	8	1	5	2
Flint	71	66	4	...	...	1
Glamorgan	119	97	16	...	6	...
Merioneth	31	23	3	...	5	...
Montgomery	30	29	1	...	...	...
Pembroke	42	37	5	...	...	...
Radnor	34	30	2	...	2	...
Total England and Wales...	10,345	8,894	521	41	806	89

BATH AND WEST OF ENGLAND SOCIETY, AND SOUTHERN COUNTIES ASSOCIATION.

A meeting of the Council of this society was held on Tuesday, March 29th, at the White Lion Hotel, Bristol, R. G. Badcock, Esq., in the chair; there were also present, Messrs. J. D. Allen, H. G. Andrews, S. Best (Hon. and Rev.) J. T. Boscawen (Hon. and Rev.), R. Brent (Colonel), W. A. Bruce, Clement Bush, R. H. Bush, Thos. Danger, R. R. M. Daw, Fras. W. Dymond, Chas. Edwards, M. Farrant, John Gray, Jonathan Gray, J. D. Hancock, James Hole, J. E. Knollys, Jos. Lush, H. A. F. Luttrell (Colonel), H. St. John Maule, H. Middleton, E. F. Mills, H. G. Moysey, R. Neville-Grenville, M.P., R. H. Paget, M.P., T. Phillpotts (Rev.), W. B. Scott, Ph. D., R. J. Spiera, J. C. Moore Stevens, R. Trood (Major), H. Williams, and J. Goodwin (Secretary and Editor).

A communication was read from Sir Stafford H. Northcote, the president for the year, wherein, referring to his rumoured visit to Canada, he said, "I think it very doubtful whether I shall go at all; but, if I do, I hope in any case to be back in time for the meeting at Taunton."

The Council having at their last meeting granted a sum of £100 to the Arts Committee for the Taunton Meeting, in June next, now recommended the following appropriation of the grant. The £100 to be added to the sum received from the sale of the Art Union Tickets, thus forming one common fund to be drawn for by the subscribers to the Art Union and the annual members of the Society, and providing the following special prizes: Two of £20 each; two of £15 each; and three of £10 each. This recommendation was adopted.

The Railway Committee having entered into negotiation with the various companies for facilitating the traffic in connexion with the Society's approaching exhibition, satisfactory replies were produced by the Secretary from the managers of the Bristol and Exeter, the Midland, the Great Northern, the London and North Western, the London, Chatham, and Dover, the Somerset and Dorset, and other railways.

A clerical error having been committed by the judges in entering their award of prizes in Class XII. at Southampton, whereby Mr. W. B. Simonds, M.P., was represented as entitled to the prize of £20 for the best Hereford bull not exceeding two years old, and Mr. Nathaniel Benjafield, of Short's Green Farm, Motcombe, Shaftesbury, to the prize of £10 for the second best, the error was now rectified by the act of Mr. Simonds, who, having satisfied himself that a purely clerical error had been committed by the judges, waived his right to the prize money already paid to him, and this, with the sanction of the Council, was directed to be handed over to Mr. Benjafield as the actual owner of the first prize animal in his class; Mr. Simonds's animal taking the second prize.

Mr. J. H. Kennaway, of 19, Oxford-square, London, was elected to supply the vacancy in the Council occasioned by the death of Mr. John Woolcombe Sillifant, of Combe, Copplestone, Devon.

A communication from Mr. E. G. Carew Gibson, of Crofton Isle of Wight, offering a prize for pheasants at the Guildford meeting, was ordered to be referred to the Stewards of poultry.

NEW MEMBERS.

GOVERNOR.—Mr. R. Bright, M.P., Stocks, Tring, Herts.
MEMBERS.—Colonel Gustavus Basset, Telside Park, Cornwall; Messrs. Becket and Sons, Quiet-street, Bath; Mr. Edward Dymond, Sampford Arundel; Messrs. Follows and Bate, Manchester; Colonel W. R. Gilbert, The Priory, Bodmin; Mr. John George Johnson, Crosshouse, Torrington, Devon; Mr. William Lewis, Northgate-street, Bath; Mr. W. H. Richards, Stapleton House, Martock; Messrs. Southwell and Co., Albion Foundry, Rugeley.

THE LATE MR. H. HALL DIXON (THE DRUID).—A proposal has been made for raising a subscription for the widow and family of this gentleman. It would be wrong to infer that Mr. Dixon died in anything like indigent or needy circumstances, but there is a young family of eight children to bring up, and hence the origin of this movement. Mr. Jenkins, the Secretary of the Royal Agricultural Society, has consented to act as honorary Treasurer, and Mr. Thornton, the Shorthorn auctioneer, as honorary Secretary. The Duke of Devonshire has already headed the list with a donation of 25 guineas and other subscriptions have also been promised.

BOTLEY AND SOUTH HANTS FARMERS' CLUB.

THE WASTE LANDS OF ENGLAND.

At a meeting of this Club Captain MAXSE, R.N., gave a lecture upon Uncultivated Lands. Mr. W. Warner presided. A feature in the lecture was a map, with the proportion of waste land to cultivated land exhibited in blank parallelograms drawn to scale.

Captain MAXSE felt that there was a great deal of misapprehension and prejudice that required clearing away from our minds before we could examine the subject of our wasted land fairly and impartially. There are some people (he continued) who imagine that to call attention to the uncultivated land by which we are surrounded is to challenge the right of private property. They therefore petulantly refuse to consider the subject at all. There are others who belong to the Fatalist class, and, believing whatever is right, plead that whatever is out of cultivation ought to be out of cultivation in compliance with the design of Nature or (you are permitted to take your choice of these authorities) the canons of Political Economy. As to the first class of objections, this constant cry about the rights of property is a very dangerous one. Looking back in history we may observe that it is one which has been raised whenever an attempt has been made to redress an evil of any magnitude, and always by people who have had possession of some power injurious to the community at large, and of which they feared dispossession; whilst in reply to those who undertake to represent Nature and the *laissez faire* or "let alone" school, he ventured to say that both Nature and the Political Economists disown them. With this slight preface he proceeded to call attention to the extraordinary amount of uncultivated land in this country, illustrated by the map on the wall. Few people can look on that map without a feeling of astonishment at the amount of uncultivated land thus revealed at a glance, and in all probability this assertion will be heightened when they remember the common assertion that England is so densely populated, so exhausted in regard to space, that she must immediately commence to discharge her surplus population on other shores (Hear, hear). The idea of this map was acknowledged as due to Major-General Alexander, a gentleman residing at Southsea, who has made the subject of waste land his particular study, and who lent the speaker the original in a smaller form, as well as some valuable notes of a lecture he gave at Clapham last year. Captain Maxse proceeded to say that he particularly desired to distinguish between the amount of land that cannot be profitably cultivated by ordinary means, and the land that can be cultivated by ordinary means. In estimating the number of waste acres that should be in cultivation, he could only present approximate figures—in fact, estimates, and in order to confuse as little as possible, when referring to large areas, he gave only the gross figures, omitting the fractional figures. The total acreage of the United Kingdom amounts to 77 millions and a half, and of these we have, according to the Board of Trade returns, just issued, 46 millions under all kinds of crops, bare fallow, and grass, and out of this 46 millions there are 23 million acres of permanent pasture, meadow, or grass exclusive of heath or mountain land. This leaves 31½ million acres totally unaccounted for. The cultivated and uncultivated land is distributed in the following manner:

Taking England first, we find that out of an area of 32,590,397 acres, we have:

13,274,408 under all kinds of crops, bare fallow, and grass under rotation;
10,096,094 under permanent pasture, exclusive of heath and mountain land;
9,219,895 waste, or land unaccounted for.

In Wales, out of an area of 4,734,486, we have:

1,003,106 under all kinds of crops, bare fallow, and grass under rotation;
1,527,534 under permanent pasture, exclusive, &c.;
2,203,847 waste, or unaccounted for.

In Scotland, out of an area of 19,639,377, we have:
3,325,888 under all kinds of crops, &c.;
1,112,269 under permanent pasture;
15,201,240 (three quarters of whole) waste, or unaccounted for.

In Ireland, out of an area of 20,322,641, we have:
5,596,824 under all kinds of crops, &c.;
10,043,877 under permanent pasture;
4,678,940 waste, or unaccounted for.

In the Isle of Man, out of an area of 180,000, we have:
67,677 under all kinds of crops;
16,860 under permanent pasture;
95,463 (more than half) waste, or unaccounted for.

Two questions present themselves for consideration: 1. How much of this land should be in cultivation? and 2. What is the cause of fertile land lying waste?—and the first of these he regarded as their principal one. There was great difficulty in answering the first question with accuracy. There was no help to be got from official returns, those of the Board of Trade being confined entirely to the produce of land in cultivation. The figures as to cultivatable land out of cultivation were generally quoted from Porter's "Progress of the Nation," Spackman's "Analysis of the Occupation of the People," and McCulloch, and mainly founded upon a statement by Mr. William Couling, a civil engineer, who travelled all over England to gather statistics for a select committee of the House of Commons in 1837, and who said that there were, probably, but 15,871,463 acres of the United Kingdom irremediable, and upon his authority we were led to conclude that there remain, at the present moment, no less than 15,595,969 acres of cultivatable land still lying waste. Mr. Couling's figures were not unimpeachable; for, as an illustration, he estimated the cultivated land of Hampshire at 900,000 acres, whereas by the Board of Trade returns now we have but 685,540 acres cultivated, and he estimates the total amount of cultivated land in the United Kingdom in the year of his report at 46 millions, which is all that we have now after the enclosure of an additional million. If he does err, it is in the direction of under-estimating the amount of land that may be profitably cultivated, and, erroneous as his report may be, it is—shameful as the admission appears—the only report possessing official character which takes a comprehensive survey of our subject, and is that upon which all our usual information is based. The proper method of ascertaining the value of Mr. Couling's statement was to take different parts of the kingdom in detail, and this he proceeded to do, quoting Ireland and Scotland. Coming next to England and Wales, where we have 11,423,748 waste acres, he referred to several articles written by practical men from time to time in the Royal Agricultural Society's *Journal* upon the condition of various counties. Among them there is universal concurrence of opinion as to the extraordinary waste of our land wealth. Mr. Dyke Acland, whose authority will be regarded as unexceptionable, says that in Somersetshire alone "there are thousands of acres of moor and fen land capable of the highest order of arable cultivation." We have similar remarks on other counties. Mr. Bailey Denton stated before the Rivers Commissioners that whilst "only 2,000,000 acres of land in Great Britain have been drained, upwards of 20,000,000 remained undrained, and of this about 9,000,000 are clay soil." General Alexander, in a lecture, says—"Some few years since, when visiting Cornwall, I saw large tracts of waste land in all directions, and some of it covered with luxuriant growth of gorse and ferns. How is it, I used to ask in my ignorance, that land which can grow such magnificent weeds is not turned to better account?" "Impossible," was the answer I always received, "the land is not worth cultivating: it would not pay." Of course I had to be satisfied with this answer. Only last year on re-visiting Cornwall, I found that a large portion of the neglected land was in full cultivation and bearing rich crops.

'I see a great change,' I observed to a friend. 'Yes,' he said in reply, 'there is a great improvement: the farmers have taken in a great deal of the waste land, and some of it now forms the most productive portions of their farm.' General Alexander then refers to one of the causes that had tended to produce this result—"the landlords had granted their tenants very long leases of their land at exceedingly low rents." Evidence of this sort might be multiplied, and was doubtless within the memory of all present. Then we had general evidence from the Enclosure Commissioners, who have to report on the character of the waste land which is enclosed under authority, and of which he gave some specimens. Since 1827 (he continued) about one million acres have been enclosed, and a large portion of it brought into cultivation. This is not much, seeing that population has about doubled since that date, but it proves, in spite of the disadvantage under which agriculture labours in this country, that it has paid to cultivate a large amount of waste land. I have been careful to say that only a "large portion" of this has been brought under cultivation, because I believe that some of it, notwithstanding the plea upon which it was annexed to neighbouring estates, remains untitled, owing to the neglect and indifference of landowners. It may, however, be said that the land will not pay to cultivate, and that whatever has remained out of cultivation does so upon the sound commercial principle of its not paying. Now, when we say this, we must be very clear as to what we mean by "paying." If we mean that the land will not pay a high rate of interest upon a high nominal value which is purely an artificial one, there may be truth in the assertion, as far as the owner is concerned; but he should have considered this previous to undertaking responsibility of ownership. I contend that no one is justified in wasting (to a clearly appreciable extent) the productive power of land; and it must be remembered that although the land may not pay on the entire investment, including the purchase-money, it certainly will pay on the capital necessary to bring it into cultivation; there is, therefore, no ground for shirking the outlay—it is perfectly clear that the land pays no one while lying waste. Far more strongly does this argument tell in regard to common land that has been taken from the community, and allotted to proprietors with the express object of bringing it into cultivation for the general good. I cannot wish for a better illustration of the unjustifiable waste of good land, and of the contrast between the interest of large and small landowners in the cultivation of the soil, than is afforded by a common in my own neighbourhood called Titchfield Common. I shall content myself with a bare narrative of the facts of the case. This common was set out in allotments to large and small owners, in 1862, in the following proportion:—

Land set out to 32 owners in parcels exceeding 8 acres	900
Of this amount, up to Sept., 1869, eight owners had broken up and tilled.....	225
Leaving uncultivated	675
Land set out in 255 plots, in parcels under 3 acres	190
Of this, up to the same date, there has been broken up and tilled	182
Leaving uncultivated	8

These eight acres remaining, I believe, in the hands of speculators or lightholders. The capital necessary to bring this land into cultivation amounts to £10 or £12, and the average rent ranges from 30s. to £3, small tenants paying the highest rent, and I need hardly say purely for the sake of the produce of the soil. I now come to the consideration of royal forests and woodlands. These extend to about 100,000 acres. As nearly three-fourths of this is situated in our own county, the Woods and Forests question may be considered essentially a Hampshire one. We are thus brought, therefore, to our own province. According to the Board of Trade returns just published, Hampshire contains 1,070,316 acres. Out of this area we have—531,112 under all kinds of crops, bare, fallow, and grass under rotation; 154,428 under permanent pasture; 384,676 acres, or more than *one-fourth*, of it waste, or unaccounted for. Deducting 30,000 acres for water in rivers and estuaries, we are still left with 334,676 acres of woodland and common. I feel that you can all judge far better than myself of the amount of this which might be under profitable cultivation.

I have been fortunate enough to secure a very valuable opinion on this point. I imagine it would be difficult to obtain one more likely to secure universal respect than that of Mr. Blundell. He calculates that in Crown lands, heaths and commons, mudlands and estuaries, there are in this county at least 130,000 acres which might be profitably converted into use as arable or pasture. Now as, whenever a proposal for improvement or reform is made, the first opposition assumes the form of misrepresentation, I should like to say here that, although I complain of the amount of waste land there is on all sides, I do not ask that all woodlands should make way for the plough. There is some woodland which it would probably be advantageous to grub up and convert, but a large portion must always be desirable, not only for ornament but also for utility, and there is besides, soil solely adapted for timber cultivation. At present we have it in excess, and certainly what we have in excess in Hampshire is waste common land. If Mr. Blundell's 130,000 acres were absorbed into use, we should still have over 200,000 acres of wild land, which surely is as much as we can afford in a populous county. If, however, there is some misappropriation of woodland, how much more is there misappropriation of land in common and heath, and I should like to know where is the bit of common land that has once been got into cultivation that it does not pay to continue in cultivation. Our greatest waste of land is in the New Forest. We have lately had some characteristic correspondence on this subject. It is curious to note how on one side the experienced cultivator perceives fertility in the land, and how the landowner, to whom land bears but a residential value, can only perceive barrenness. Mr. Dickinson informs us that there is in the New Forest 60,000 acres of land capable of growing the finest grain and the finest roots in England, upon which Mr. Eddaille steps forward, demands his balance-sheet, declares cultivation won't pay, and insinuates against him the personal motive of desiring to manage the 60,000 acres himself; after which follows another residential point of view in Mr. Morant, who has read "with much pleasure and interest Mr. Eddaille's admirable exposure of Mr. Dickinson's fallacies"—the cultivator to him is the "ruthless agriculturist" who must hate the National Gallery because he wishes to grow more food. Well, I have been a lover of the picturesque all my life. We all know that

"There is a pleasure in the pathless wood,"

but this land question in the New Forest, as throughout England, is a question between sentiment and sport on one side and the lives and happiness of thousands of human beings on the other (Hear, hear). If the gentlemen of the New Forest could only realize this, I am sure they would not desire to preserve it as a "National Gallery" for the benefit of themselves at the expense of the nation. I have always understood myself (although Mr. Dickinson is probably as good an authority as anyone) that there are in the New Forest about 30,000 acres of corn-growing land. If this be so, why should not the successful precedent of Wickwood Forest (see an interesting account of this in volume 24 of the *Agricultural Society's Journal*) be followed with this amount, by reclaiming it, dividing into farms, and letting on leases of thirty-one years, reserving out of the rest complete common rights for the neighbourhood, and especially for the poor, who have suffered too much hitherto from enclosures? I would rather this were done than see it merely sold and absorbed into the unproductive "pleasure ground" of the rich (Hear, hear). I will not detain you further with the tiresome detail we have been compelled to enter on in reply to the first question. As regards opinion and information upon character and probable value of waste Hampshire lands I feel I shall be better as a listener than as a speaker. I hope I have succeeded in establishing in your minds that the figures with which we started are, as far as we have the means of ascertaining, by no means extravagant. That they are not is my own impression. Before concluding this part he inquired if it was desirable that all cultivatable land should be cultivated, and contended that a country could not be regarded as over-populated before all its resources were developed (Hear, hear). Those who talked of our population had their attention fixed upon the large towns, and it was true that more than half the population of England had collected in the large towns. But while these are densely crowded, the country had become depopulated (Hear). A constant emi-

gration has been going on for several years on the part of agricultural labourers into the towns, until, as Mr. Caird informs us in a paper read before the Statistical Society last year, "the proportion of the people of England employed in agriculture has diminished from a third to a tenth," and this within a single generation. Not only, however, is the number of agricultural labourers diminished, but the quality of the labour is affected, the proportion of boys and old men to able-bodied men having increased considerably. Hence he (Capt. Maxse) denied that we are over-populated. What we suffer from is the congestion in the towns and depletion in the provinces (Hear, hear). The method in which population is reckoned conveys a very fallacious idea. For instance, it is said that England and Wales have 347 persons to the square mile, but in some districts we have not more than one person to the square mile, and in the east end of London we have 130,000 persons to the square mile. The really important point in regard to population is its distribution. While we have eleven millions in the towns, there are but nine millions in the country; whilst Belgium, with a poor soil, is better off, although she has 430 persons to the square mile, for out of her population of five millions, one million and a half live in towns, and three millions and a half in rural parishes. In France, of the population of 38 millions, 23 millions are rural, and 15 millions non-rural. The most extraordinary and instructive statistics come, however, from the Channel Islands, which exist under a totally different land system to our own, and under which we find 1,900 persons existing happily, and in perfect comfort, to the mile, and land let (when let) at £5 to £6 the acre. Even the little island of Sark, with an area of only two and a half square miles, and no harbour, maintains 232 persons to the square mile, enjoying positive independence and happiness, and exporting more articles of consumption than they import. I take this information from a valuable pamphlet upon "The Land Question of the United Kingdom," by M. Tupper, of Guernsey, and I cannot resist calling your attention to the very instructive comparison he draws between the statistical position of the two classes of dependencies of England which are subject to different land systems. The first place he looks at is the Isle of Wight, which "with 86,801 acres of land has a population of 55,363, and scarcely any shipping or commerce." On the other hand, Jersey, with "under 28,000 acres has a population of 55,613, and 55,000 tons of local shipping, carrying on trade and commerce with the whole world." After further extracts the lecturer continued; Yet, it may be urged, the wealth of the country is enormous. So it is in one sense. So far as the measure of money goes, we—that is, some of us—are immensely rich. In the space of fourteen years our aggregate exports and imports have increased from £268,210,145 to £523,100,230. These big figures produce a very imposing effect—also, it is to be feared, a rather soporific one. People listen to them, say "All right," and go fast asleep over evils which in the mean time ripen, and ultimately reappear intensified. Notwithstanding the apparent wealth suggested by these figures, there would appear to be paralysis at the very source of the nation's life. While there is superfluous capital—capital in sufficient excess to compete in any wild scheme upon this or the other side of the globe—there is some cause that prevents capital turning itself upon English land and employing English labour. We want to grow more food. In order to do this, three ingredients are necessary—capital, labour, and soil. We have them all in superabundance. But the capital flies abroad, the labour goes to the workhouse and the gaol, and the soil lies waste, or at best grows Japanese pheasants for some idle gentleman to shoot at—who, may be, has so many other places to idle at that he can only afford one week to idle at the place where the Japanese pheasants have to be shot. Look at the amount of food we import from other countries. I believe myself we are too dependent upon other countries for food. Free-trade is right, but home waste is wrong. Even granting that we can obtain corn cheaper from other countries than we can grow it ourselves, it is quite certain that we already grow some at home, and if we can, we should grow more. But putting entirely on one side our importation of wheat, and there is this reason for putting it on one side, viz., that notwithstanding our population has increased 4,500,000 since 1841, the price of wheat is on an average lower than then; putting aside this as a matter of no moment (or assuming it to be an advantage) our annual importation of wheat, amounting to (in wheat and flour) 85,000,000—there yet remains an

expenditure of £42,000,000, in foreign agricultural produce and stock. Since 1854 our importations of food have almost doubled. Captain Maxse here enumerated the various items of food imported. Now, how much of this food might we not grow at home? (Hear). Look at the price of meat, a commodity which it is costly to import; compare the present price with its past. In the sixteenth century beef and pork were sold at a half-penny a pound, and veal at three-farthings; in the eighteenth century it rose to 8d. a lb.; and now in the nineteenth century it has risen to a prohibitory price as far as the poor are concerned. Again, what a volume of comest is afforded in that single item about eggs—£1,000,000 for foreign eggs! Our dairy produce, not less than our meat growth, is—it must be confessed—miserably deficient. The reason of this is that dairy produce is the result of small farms, and these we have very nearly abolished in England. The difficulty in treating this subject within the limit of a paper is to know where and when to cease drawing upon the accumulating argument and illustration that present themselves to demonstrate the error of our position. In saying this I beg you will understand clearly that I do not mean error in mode of cultivation; what I point out is error in the system of land tenure, upon which cultivation and agricultural enterprise largely depend. I believe that the system of agriculture in this country, when it can get fairly at work, surpasses that of other countries. We know at least that the yield per acre in bushels of wheat is much higher than anywhere else. Mr. Caird, after a consultation with M. de Lavergne upon the cause of this, attributes it to the larger proportion of our restorative (grass and roots) area to our corn or exhaustive crops compared with that of other countries, but whatever the cause, the fact of considerable excellence in cultivation is established, and it appears to me we should more largely avail ourselves of it. There is another point worth considering. Look at the cost of our pauperism and crime. We spend some £18,000,000 in the relief of distress and the repression of crime. Some people will say "Oh, you must always have pauperism and crime." To this I enter my most vehement protest. Misery is not God-ordained (however convenient it may be to declare it is), but man-ordained. Nature supplies everything in abundance. We cannot in the midst of our human hive, overflowing with energy and activity, seal up with impunity the primal source of all human industry and wealth. If we do, the energy and activity display themselves in very unpleasant forms. Puppen and rogues are manufactured as much as any other article. I think we should do well to remember the terrible disadvantage that poor people labour under born in a country where—being themselves destitute and without prospect—to use the words of Tennyson's "Northern Farmer"—

Property, property's ivry thing 'ere, an', Sammy, I'm blest if it isn't the saime oop yonder, fur them as 'as it, the best. 'Tis'n them as 'as munny, as breaks into 'ouses an' steals, Them as 'as oots to their backs an' takes their regular meal, Noa, but it's them as niver knows wheer a meal's to be 'ad, Take my word for it, Sammy, the poor in a loomp is bad.

—"Rights of property?" Yes, these—within reasonable limits—we respect; but the rights of property must not be pushed to the extent of involving the right to monopolise the means of existence. This brings me to our second question. What is the cause of fertile land lying waste? My paper has extended itself so far over the first question, that I shall have to shorten as much as possible my reply to the second. The cause is to be attributed to our land system, because it promotes the accumulation of land into few hands, artificially restricts its circulation in the market, and encourages an artificial value being placed upon land which is detrimental to its true agricultural value. The first proposition, that the land system promotes the accumulation of land in few hands, is proved by the fact that whereas in 1770 there were 350,000 rural landowners in England, we find ourselves at the last census (1861) with but 80,768, and is illustrated by the following passage from a very valuable work that has recently been published, entitled "Systems of land tenure in various countries." The article I quote from is by Mr. Cliffe Leslie, upon the land system in France. He says: "The contrast between the land systems of France and England, two neighbouring countries at the head of civilisation, may, without exaggeration, be called the most extraordinary spectacle which European society offers for study to political and social philo-

sophy. The English census of 1861 returned 30,766 landowners and 240,461 farmers," and he goes on to tell us that by the latest official statistics in France there are 5,000,000 rural proprietors, of whom nearly 4,000,000 are actually cultivators of the soil (the area of France being but one-third larger than Great Britain). He begged they would not think he advocated the French law of compulsory sub-division, which he proceeded to explain (although we may be quite sure that the effect of resisting moderate proposals will be that it will be ultimately demanded, and possibly conceded in a panic). The evil effect of our land system, he added, is that cultivation is not the primary object of ownership of land, and therefore that agricultural produce is not the measure of its value. There are two forms of value attached to land—the one is what may be called the residential value, and the other the agricultural value, and in this country the residential value (which of course is a legitimate one within reasonable limits) supercedes the agricultural value. Then, again, it is the object of so many good people to what is called found a family—that is to say, to get hold of some land and tie it up by means of the very mischievous power granted by the law, as long as possible within the noble family of Tomkins, away from every one else. The consequence is that when a natural cause arises (such, for instance, as the poverty of a Tomkins, and his inability to do justice to the land) to send the land into the market to a richer man, there is an artificial restriction in deference to the posthumous power of a departed Tomkins. The law, therefore, in the power it gives, stimulates a fictitious value to the land. It is to the interest of the community that land shall flow freely into the market whenever there is a natural cause impelling it there. But surely, it might be urged, in reply to all he had been saying, a man may do what he likes with his own, and it is his own property. This, however, called our attention to the fact that the right of property in land has a different foundation to the right of property in any other form of wealth. Mr. Mill says: "Whenever, in any country, the proprietor, generally speaking, ceases to be the improver, political economy has nothing to say in defence of landed property as then established. In no sound theory of private property was it ever contemplated that the proprietor of land should be merely a sinecurist quartered on it." I could cite passages innumerable from all the eminent authorities we are in the habit of deferring to—from Blackstone, Vattel, Adam Smith, Bentham, McCulloch, and J. S. Mill, in support of the views I have ventured to express. The attention of the community has, however, never been aroused to the importance of the subject, and it is to be feared never will be until the evil of the land system makes itself known in some disastrous manner. Crowds from all classes will flock to hear the disgusting revelations of a high-life divorce scandal, and the newspapers that report it fully treble their sale, but subjects of the deepest social and political importance, problems that depend entirely for their solution upon the amount of interest they are able to attract; questions affecting closely the lives and happiness of millions of fellow-creatures, and, possibly, the fate of a nation, are too often tossed with impatience aside; for

"Evil is wrought by want of thoughts
As well as by want of heart."

Mr. BLUNDELL, in opening the discussion, said he thought the lecture followed well upon the subject he had the privilege of reading a paper on in January, and that it entered most fully into a branch of it which he did not then introduce. The letter it had brought forward from Mr. Dickinson he considered too highly coloured, whilst Mr. Esdaile's was not coloured enough; and Mr. Morant seemed to have fallen into error in intimating that the balance-sheet of a notorious Essex farm had not been published. He presumed that this alluded to Mr. Mechi, who, it was well known, had published and circulated his balance-sheet. The subject seemed to divide itself into two heads—crown lands and private property. With respect to the former, that was a question for Government, and was not a party question, or at least ought not to be so, because of its importance to the country. It was a great disgrace that in these days of commerce and utilization such large tracts of land should remain uncultivated. Mr. Morant pleaded that the New Forest should be kept open for the sake of pleasure seekers, but they desired that in any enclosure recreation and pleasure grounds for the inhabitants should be

preserved, such as were to be seen in Southampton by the preservation of the common. He could not understand gentlemen going to Government and asking them to assist in sending labourers out of the country when there were so many thousands of acres lying unproductive which could be made to yield something yearly, if not of corn, of timber. It had been urged by some that the Forest was required for the navy, but we all knew the extent to which iron had superseded timber in ship-building, and if the money would realise 4 per cent., whilst the timber would not pay 2, and thus double the rent of the land, why, in the name of common sense, should the timber stand? The pauperism and the difficulty of maintaining people in this country demanded that every man should raise his voice against land lying waste, and force the subject upon the attention of the Legislature. As to the law of entail, there was no doubt that through this law and the shortsightedness of men who took advantage of it, many improvements were prevented, and the sooner Parliament looked into this the sooner it would show that it had really at heart the interests of the country which it governs.

Mr. JAMES WITHERS made some remarks showing the importance of agriculture in providing for the wants of the people, and urged that it was a disgrace to us as a nation to have so many able men occupying our unions and being fed, for the great part, on American and Russian produce, while so many thousands of acres of land were left in the country uncultivated. Having a plenty of capital and of spare labour and an increasing number of consumers, what good reason was there why they should not be applied to our waste lands? Some urged, he knew, that they would not pay for cultivation, but from 16 years' acquaintance with the New Forest he believed that it was not inferior in average quality to the commons in that immediate neighbourhood which had of late years been reclaimed and cultivated. Emigration had been talked of as a remedy for the present distress amongst the unemployed, but he urged that it would be far better and more to our credit to put them on our waste lands, and so to turn their able and willing bodies to good account amongst ourselves instead of sending them to other lands. Sport had been urged as a reason for retaining the Forest as now, but he believed that cultivation would increase the sport fourfold and that hares and partridges would be more plentiful under the altered state of things—a proof of which they had in that neighbourhood. He was opposed, however, to very small holdings, on the ground of their not being sufficient to keep three or four families respectably. The profits on farming had been so small that if the present average farms were split into four or five holdings there would be great poverty among the occupiers (Hear, hear). With respect to the letters of Mr. Dickinson and Mr. Esdaile, he agreed in the expression of opinion that one was coloured too much and the other not enough.

Mr. SPOONER would like to hear one or two points upon which they were specially called to fix their attention, whether as regarded the laws relating to the tenure of land, or the cultivation of the New Forest. He had read the letters which their last discussion upon waste land brought forward, and was struck by the extreme opinions of the two parties—the one who would preserve the Forest in all its native beauty and all its native ugliness, and the other who wished to grow eight or ten sacks of wheat on every acre of the Forest—and thought them both equally extreme, and equally astonishing to those who knew the Forest. With the letter of Mr. Morant he could not agree, as regarded the great injuries that would accrue to the present estates by more houses being built there. If the argument was good that the Forest was better, more productive, and more advantageous in every respect, if left to its native state, that argument would apply to the estates and mansions already existing. If they were good, a larger number would be good; but if bad, then they ought to be done away with. Referring to the barrenness of some parts of the Forest, as contrasted with more beautiful portions, he said that the improvements which had been effected in the plantations of late years must strike every one, and showed that there was no reason why every bog in the Forest should not be drained and cultivated with profit and advantage. The point he thought they should take up was, How could this land, as a whole, be turned to the best advantage? He never wished the Forest to be entirely done away with; but he thought that at least one-half of the present uncultivated land should be sold, the most attractive spots being selected, and

the rest improved, as far as may be, by planting or otherwise. He was sorry to see statements circulated that the whole of the Forest could be made productive, because that was notoriously not the case. Since long before the time of William the Conqueror, a very large portion of the soil had been taken away every third year. The custom was to pare one turf, and leave two. In three or four years the turf again grows, and in its turn is taken away. If this practice of cutting turf had never existed, no doubt there would be a soil through the greater part of the Forest, where there was absolutely no soil now, or not perhaps more than two inches to the dry gravel. If, then, this point of ability to cultivate all were pressed too far, he thought it probable that more harm than good would be done, because those statements would not bear the light of investigation. He should like to see at least one-third of the existing uncultivated land there brought into cultivation, the belts of estates sold, and the remainder improved as much as possible, but to remain intact as forest, or, at any rate, as public land. With respect to the population of the Channel Islands, he thought it more attributable to the climate, the great productiveness of the soil, and the large number of tourists that annually expended large sums there, than to the difference between their land-laws and ours; whilst, with regard to purchase of estates in this country, he had no doubt the rent-roll took a fair share in the calculations of an intending purchaser. As to the system of small holdings, although this district might be an exception to the rule, he had no doubt no farms were so badly managed as those in the hands of small holders, because their returns were so small as to hamper their enterprise.

Mr. GODERICH had no doubt that a considerable portion of our waste land was capable of some kind of production, but it would, probably, first require a great outlay. In many of the low lands of the New Forest only drainage and chalk were required to make them valuable as pasture; but with the higher lands it would be very different, and, therefore, he thought they should divide it into two districts—the upper and lower: and let the whole go into the market, either by the hammer or by private contract. It would take up a considerable deal of labour for a number of years, and be of benefit to the nation in more ways than one.

The CHAIRMAN thought the subject a very appropriate one at a time when in London and other places meetings were being held to promote emigration and to relieve distress. He was very pleased to hear the Government object to assist the views of those gentlemen who waited upon them the other day to send people out of this country. To have adopted their suggestion might relieve a present difficulty, but he believed in the end it would lead to a greater one. He thought that, speaking generally, the wealth of this country consisted quite as much in the people as in the land or the money, for the stronger a country was in people the better was it able to produce wealth, resist aggression, and consume its productions. The lecturer had shown them in a very lucid manner the quantity of land in this country remaining uncultivated, and he had no doubt that no small degree of the distress now prevailing was attributable to the large landowners for not employing labour in reclaiming and making productive these thousands of acres. It might be well to say that a man had a right to do what he liked with his own; but that clearly had a limit, and he thought that a man ought not to have the power of entail for more than one generation after him. With reference to the taunt to Mr. Dickinson, that he had not produced his balance-sheet, he had no doubt he could produce one quite as good as the occupiers of the farm before him, for he believed he was correct in stating that before, it never paid a shilling to the Crown, who now received some 80s. or 40s. an acre for it. Not only this, but the whole of the Forest never paid its expenses for many years. And when it was said it was absurd to talk about enclosing the New Forest, they had only to refer to what the late Lord Leicester did with so many thousands of acres in Norfolk, converting a blowing sand into a tract bearing turnips and corn in abundance; and he questioned whether any part of the Forest was so barren as these sands once were. They had plenty of clay there for bricks and tiles and to mix with the sand, and other opportunities of intermingling the soil; and, although it might be barren in some places, there was something in a soil brought to the air and exposed that would produce, if not corn, fir. It was clear that it now paid next to nothing, and as regarded the sentiment

that 60,000 acres should be preserved for the sake of a few picnic parties, he thought it time such sentiments should give way to the useful. He therefore thought they would have to ask the Forest proprietors to make up their minds to have the "ruthless agriculturist" there growing his turnips. There was no fear of a National Gallery being brought there, else he was not sure that some would be even found objecting to that.

Captain MAXSE, in reply, said that he purposely abstained from entering into the controversy of "Small versus Large Farms," though he knew that the principal modern writers and thinkers upon the subject agreed in the small-farm system—that he would like to see the laws of primogeniture, entail, and costly conveyance altered, and a tax laid upon cultivable land which remained uncultivated. They simply wanted that natural causes should operate in relation to the exchange of land, and he thought their opponents, by refusing to entertain moderate proposals, led to the advancement of the wildest agrarian theories. He then proposed a resolution to the effect that, whilst there are so many millions of acres lying waste, he was of opinion that attention should be directed to its cultivation as a means of employing our surplus population rather than to the question of emigration.

This was seconded by Mr. BLUNDELL and carried, and votes of thanks to Captain Maxse for his paper, and the chairman for presiding, terminated the meeting.

MEETING AT LYMINGTON.

A meeting was held in the Town Hall, Lympington, to consider the subject of enclosing the New Forest. The Mayor, Mr. Corbin, was in the chair. The meeting was very largely attended.

The Town Clerk having read the requisition calling the meeting,

The Rev. W. FIELD proposed the first resolution, stating that he should not make a speech, Mr. DICKINSON, of New Park, having agreed to second the resolution, which was as follows: "That, in the opinion of this meeting, the present condition of the New Forest is not satisfactory, from either an economical or social point of view, and that the time for effecting some beneficial change has now arrived."

Mr. DICKINSON said he felt very great pleasure in seconding the resolution. He had farmed for sixteen years on the New Forest land that had been once unproductive, but it was now very productive, and that not from any extraordinary means. He never knew anything got from spending nothing. Many farmers looked upon experimentalizing as unwise. He did not think so. If a new manure were brought to him, he tried it first on single plants, to see its effect. Thus he discovered that one manure would produce large crops of grass; another of corn; while another was simply poison; and so on. He had in his garden a range of pots that, in this manner, was telling him all manner of facts. He thought the New Forest was capable of keeping a much larger number of animals than he had formerly stated. He believed it was capable of keeping not less than 200,000 sheep, besides producing cereals over not less than 30,000 acres. The people in various parts of the Forest were half-starved, for want of employment. The New Forest—what does it now produce but fern and fir-trees? but if it were dug and cultivated it would produce gold and silver—oats, and wheat, and barley. It had been said of him he was not willing to show his balance-sheet. He thought very few farmers could produce a balance-sheet. He should want a couple of clerks to keep the accounts in such a case. But he knew he took care to look into his pocket at the year's end, and he could give them his word that the balance was always on the right side. He denied the statement that he had been losing money by his farming during the last sixteen years, and he would be happy to show a statement of these matters to any gentleman qualified to form a correct judgment thereon. The question with regard to the poor in the New Forest was this—Is a man to starve or puffer? In the New Forest children were sent out to pick up what they could, and every now and then they were prosecuted for damaging trees. As they grew up to be men they were often induced to take anything they could get when pressed with hunger and want. One night his hay had been taken from the field where it had been cut—with a horse and cart; his wheat at both ends of his farm had also been stolen. He

could tell of worse things than these if he chose. He was very happy to second the resolution.

The resolution was then put to the meeting and carried unanimously.

Mr. HELBY then rose to propose the next resolution:—That, in the interests of the general public, and particularly of the labouring classes, it is desirable that the New Forest should be enclosed and cultivated as speedily as possible, all vested interests being duly respected.

Mr. PETERSON, of Drumduan, seconded the resolution. He said he could not help feeling a lively interest in the welfare of the people among whom he had pitched his tent. He fully approved of the manner in which the resolution was worded. It was important that the vested interests it mentioned should be considered and respected. The resolution embraced the public welfare, and particularly the welfare of the labouring classes. Now, putting the New Forest, in round numbers, at a hundred thousand acres, he should call that very fair farming that did not expend more than £3 per acre per annum in labour. This, supposing the Forest to be cultivated, would bring to the labouring classes in it an income of £300,000 a-year—people who now were getting their living God only knows how. He wished to see those classes in the New Forest in a very different condition than at present. An idea was prevalent that England was overpopulated; this he denied. It was not that the country was overpopulated, but that a large portion of the land was badly cultivated, and some of it not cultivated at all. He did not see the necessity of emigration while such was the case. As a rule there was no person more helpless than the emigrant. He knew well that for one success there were three failures. We often heard about the lucky men, but not of those who did not succeed. The colonies wanted men of a very different material from those who so frequently went to them from this country. He denied *it* *toto* that this country was overpeopled. He knew Belgium, Lombardy, and China well, and was justified by his experience of those countries to deny it. We should rather inquire if the land in present cultivation was properly cultivated. Much ridicule had been thrown on the farming at Tiptree. He had been in the Tiptree country, and he would say that any one acre of the New Forest would be worth ten of that which had been taken in hand by razor-strop magic. But he had seen there a 14-acre field which had produced 20½ sacks of wheat—14 acres of which had formerly supported three geese and one donkey. About 20 years ago a geologist, Mr. Trimmer, published a pamphlet in the *Agricultural Journal*, showing the capabilities for cultivation possessed by the New Forest, with its calcareous marl, beds of coprolites, and so forth, of which it was full. As to the question whether it would pay or not, suppose the New Forest were sold to-morrow, it would yield to the Crown, and those who had rights therein an annuity equal to £10,000 a year at the least, to say nothing of the good that would arise from its cultivation. He looked upon Mr. Dickinson as a benefactor, who had shown them what could be done in the way of producing food from the land. He was not one who would sacrifice the welfare of the people to ideas of what was romantic and beautiful. He told them of a man who bought 100 acres of waste between Ringwood and Wimborne, at £6 10s. per acre, which he planted with quicks, where now 70 men were kept in constant employ, and in the summer months 150 men found remunerative employment. The New Forest land is now worth nothing except as giving some people an unbounded licence to ramble over the ground. He had been very much struck with a letter he had seen in the *Lymington paper*, signed "John Morant," which reminded him of an Ojibbeway Indian lamenting over the loss of his hunting-grounds in New York or Philadelphia. He was utterly at a loss to conceive how a gentleman of his position and education should have written such a letter, knowing it would keep away many worthy men from attending the meeting that day. It was evident he had not rubbed shoulders with the world, or such a letter would not have been written. Every man had a right to express his opinions, but no man had a right to use his influence to deter other men from expressing theirs. He did not agree with Mr. Morant's idea of the "ruthless agriculturist"—and "congeries of turnip fields." He did not exactly understand the term "congeries" as applied to turnip fields, which were difficult things to heap one upon another. He, the speaker, thought the welfare of the labouring classes ought never to be lost sight

of—that a happy peasantry was of far greater importance than a vast peasantry and howling wilderness. Mr. Dickinson had tried, and done well. A man had better even try and fail than not try at all. His desire was to see the most made of the land, and he was happy to second the resolution.

Mr. ESDAILE (Burley Manor), said he had attended the meeting, being desirous of hearing what would be said on the subject. It was a great question, and should be carefully studied. He desired to express no opinion. He was second to none of them in the interest he felt in the welfare of the poor in the New Forest. But he had heard with the greatest pain what had been stated by the gentleman who seconded the first resolution, that the New Forest children were sent out to pick and the men to steal. He must say, though among them there were some "black sheep," that the New Forest had an orderly, decent, and honest population. He could almost wish that this had been an evening meeting, so that these poor people might have been there to defend themselves. Speaking for them as a neighbour living among them, he denied the accusation. He was sure that Mr. Dickinson's kindness of heart would not permit him to state that these people were nothing but a population of thieves.

Mr. DICKINSON explained that he did not use the words as referred to by Mr. Esdaile. He said children were sent out to collect what they could in the Forest. This was an inducement to them when there to take other things. It was not the first time he had been misunderstood by Mr. Esdaile. He (Mr. Dickinson) held by his words, as he had himself suffered severely, and he could, if he liked, speak of worse things. He added that the New Forest contained all things necessary to cultivation. The marl found in it was the finest of all manures, and he had largely used it.

The resolution was then put, and carried unanimously.

Captain WILSON, R.N., then proposed the third resolution as follows: "That this meeting memorialise the Government to the effect that it is highly desirable to carry out the above resolutions by prompt and effectual legislation."

This was seconded by the Rev. J. B. BURT, of Beaulieu, who said that, as he had lived over forty years in the New Forest, had cultivated land there all the time, and had had intimate relations with its people, he thought he had some right to speak. Last year very many in his district were out of work, and came on the parish. He spoke to them of emigration. They said, "No; look at the land here lying waste; here's plenty of work, or ought to be." Before his window lay hundreds of acres of waste land that might be profitably cultivated, and would yield good crops. He had grown twelve sacks of barley and eight of wheat to an acre, besides heavy grass crops. It was possible some of the poor might think they would suffer in this proposed change, and that if a petition were got up many of them might be persuaded to sign it. He objected to the system of Crown enclosures for the growth of timber, which was now comparatively useless for navy purposes. He seconded the resolution, which was unanimously adopted.

The Rev. W. FIELD, seconded by Mr. DICKINSON, proposed "That a committee be appointed to embody the resolutions in a memorial to the House of Commons composed of the following gentlemen: Capt. Wilson, R.N., Mr. E. Dennett, Mr. Lewis, Mr. Purchase, Mr. Helby, Mr. W. Dickinson, and Mr. H. Doman."

The names of the Rev. W. Field and Mr. A. D. Peterson, were also added to the list.

Mr. R. SHARP, seconded by Mr. PETERSON, proposed a vote of thanks to the Mayor, and the meeting broke up.

THE PROVISION TRADE AT NEW YORK.—In 1869 the exports of pork from New York amounted to 72,019 barrels, as compared with 82,628 barrels in 1868; the exports of beef amounted to 32,299 barrels, as compared with 26,430 barrels in 1868; oatmeals were exported in 1869 to the amount of 47,941,458 lbs., as compared with 36,336,799 lbs. in 1868; butter to the amount of 1,168,447 lbs., as compared with 987,362 lbs. in 1868; cheese to the amount of 58,413,581 lbs., as compared with 41,233,806 lbs. in 1868; and lard to the amount of 30,383,538 lbs., as compared with 44,490,487 lbs. in 1868.

CAUSES DISCOURAGING THE APPLICATION OF CAPITAL TO AGRICULTURE

At a meeting of the Newbury Farmers' Club, Mr. J. J. MECHI read the following paper :

A nation superabounding in population and in wealth, which it loans to foreign nations in hundreds of millions, and yet, with its land half farmed and half capitalised, is dependent on foreign countries for nearly one half of its daily bread, must appear to every reasoning mind a pitiable, dangerous, and reproachful anomaly. There must be causes for this uncomfortable state of things, and into those causes we are about this evening to inquire. When this subject was proposed to me, I asked of myself the following questions :—

1. Are there practicable remedies ?
2. Will they benefit alike landowners, tenants, labourers, and the country at large ?
3. Can the necessary capital be found to carry them out ?

And I at once, guided by my own long practical experience as landowner and tenant, answered in the affirmative. As to capital, we are all, I believe, agreed, that almost any amount of money may be had on land security; and that is, I know, the experience of the several land drainage and land improvement companies that have been of late years established. I therefore anticipate that to give a security on the land for the cost of improvements effected by these companies will be hereafter looked upon as a commendable and desirable transaction. The time will come when purchasers of estates will naturally expect to find a considerable annual charge on them for liquidation of principal and interest of improvements effected through these companies. This system will (when legalised on entailed and embarrassed estates) bring into agricultural use and profit the surplus funds of those who, but for these companies, would never have thought of investing their money in agricultural improvements. It will divert millions from foreign loans that would go to strengthen foreign nations as our agricultural and manufacturing competitors, and would bring vast funds for agricultural use and profit. Before I continue my subject, let me say, truthfully and without flattery, that your county is one in the foremost rank of agricultural progress, thanks in great degree to that wise, good, and far-seeing man, the late much lamented Prince Consort, to the late Mr. Pusey, and to other spirited landowners and their tenants—some, alas! no more. I infer, from your invitation to me, and from the subject which you have chosen, that you are dissatisfied with the present condition of British agriculture, and desire to see it amended, so that we may be enabled, now that we have free trade in corn and meat, to compete successfully with foreign nations in the production of human food. I therefore ask myself, could we thus successfully compete? and I reply, with the confidence resulting from long practical experience, that we certainly could so compete, provided that all the conditions were favourable to the investment of more capital and intelligence in agricultural production. But how important and significant is this last sentence! It may be said to contain the whole future of British agricultural progression. In order to succeed fully, British agriculture should be, both as regards landowner and tenant, as free as air, and released from the numerous trammels which at present cramp its action and hinder its advance. I presume we are all agreed that so long as the average prices of meat and grain are remunerative, we, as farmers, shall not complain, although those prices may be subject to the ups and downs that have ever attended and ever must attend agricultural productions. But while the average prices since the introduction of free trade have been satisfactory to those whose farms are in a proper condition, favourable to capital, thousands of farmers who are deprived of those favourable conditions have had, and continue to have, especially just now, a painful struggle, and are totally unprepared to combat successfully with foreign competitors at the present low prices. Shut up in little ill-shaped fields, with broad hedgerows and timber trees, their land undrained, their roads wretched, their homestead ill-placed, their personal and animal accommodation insufficient and ill-arranged, their

leases restrictive and antiquated, and, in some cases, ground game in excess and a deficient capital, theirs, indeed, must be a sorrowful and unprofitable lot, still further aggravated by the uncertainty of annual tenure, and the absence of a valuation for unexhausted improvements. Not only have they to compete with foreigners, but also with those of their own countryman who, in every one of these respects, may be much more favourably situated than themselves. When I say that we could compete successfully with foreigners, it is because I know that we have an important natural advantage over them (from our greater proximity to a market) which, I think, may be taken as approaching 15s. per quarter on wheat. A considerable difference of opinion prevails as to the cost to foreigners of placing their grain in our market, and that is not to be wondered at, seeing not only how variable at times are the charges for conveyance by land or water, but also how different are our distances from the sources of supply. Estimates run from 8s. to 20s. per quarter; probably 15s. would not be far from the average truth. A friend, well versed in the foreign corn trade, writes to me thus: "As you put the question—Has the British farmer a protection to the extent of 15s. a quarter in wheat?"—coming from the Western States of America and the interior of the south of Russia, perhaps, you would be within the mark, but the great bulk of our supplies come not thence direct, although I have little doubt they do by displacement. A large portion of the wheat shipped at St. Petersburg ascends the Volga, nearly 2,000 miles, and is two years reaching the port of shipment! What are the charges, waste and interest of money? A Russian gentleman informed me that this tedious transit has been considerably hastened by the use of steam tugs on the Volga. The absence of local roads and bridges in Russia and other countries that supply us with grain, render its conveyance difficult and costly. They are, however, making railways with English money. We must not forget, in making our estimate, how numerous and repeated are the charges on transit, such as loading and unloading by land and water, cartage freight, insurance, commission, difference in weight, waste, damage by damp, heating, or salt water, the latter not recoverable by insurance unless from some accident to the ship. Now, as a good British farmer will average 5 quarters of wheat per acre (some years I have averaged 7 quarters per acre) he has thus an advantage, from natural causes, of 25 15s. per acre, to which must be added the difference in acreable produce which is certainly from 1 to 2 quarters per acre. The returns for the quantity of seed wheat sown are, in southern Russia, 5 for 1; in poor northern land in Russia, 4 for 1; in England, 14 for 1; with good farmers, 25 for 1; on my farm 40 for 1. In the United States of America it can be scarcely 6 for 1, because their average crops of wheat are, I have reason to believe, as low as 16 bushels per acre. Ours in England are 28 to 30. In Russia, America, and other foreign countries, the hand and horse-hoe are too generally neglected, and consequently they get a mixed crop of weeds, seeds, and grain. I am sorry to say that some farmers do this, even in England. Against our advantages, which I have described, must be set off cheap or nominally rented land, and the generally smaller cost of production. Take the extreme case in favour of the foreigner:

	£	s.	d.
Our rent, rates, tithes, and taxes	8	0	0
Cheaper labour in Russia	0	10	0
Other charges, manures, &c.	1	0	0
	8	10	0

—that would still leave a balance in favour of England. In America, whence we derive so much of our wheat, labour is double the price of ours, so that our advantage is increased to that extent. It may be useful to consider the present aspect of the foreign grain trade as it affects the foreign farmer, for he is by no means just now in a comfortable position, and, if I am not mistaken, those low prices will soon lessen foreign import, and gradually enhance prices here. Wheat has re-

usually been bought at Chicago (United States) at 90s. per qr., and in Russia at the same price. That wheat cannot be brought here and sold with any profit much under 40s. per qr., but how much does the farmer get for it who lives hundreds of miles away from any shipping port? for we must remember that most of the lands of the old settlements near sea-ports have been long since exhausted by constant croppings, and that it is only from the distant interior that supplies can be now obtained. Even with our good roads, which are wanting abroad, we cannot convey wheat to market under 2d. per qr. per mile, or 18s. 8d. per 100 miles. I know of oats contracted for, free on board at Montreal, in Canada, in May next, at 12s. 3d. per qr. How much will the poor farmer get, who is some hundreds of miles' distance from the shipping port? A Canadian gentleman assures me that after deducting from the present price paid in London, the charges in London, ocean freight, the transport from Chicago to New York (the port of shipment), and the charges at Chicago, with cost of land transport to Chicago, the grower realises only 13s. 6d. per qr. for wheat, or very little more than half the cost of production. He anticipates that supplies to us must greatly fall off. I am assured that exporters and importers of grain have during the last six months suffered a loss equal to £2,000,000 sterling, having ordered and bought too dear, expecting, as many of us did, that corn would realise a high price. The high price of labour in America is sufficiently proved by the fact that last year 120,000 mowing and reaping-machines were sold. Begging pardon for this digression, I now proceed to name the obstructions to agricultural progress:

1. Want of security of tenure by transferable leases.
2. Want of legalised sanction of valuation for tenants' unexhausted improvements.
3. Want of a more uniform practice in valuations, all other things being equal.
4. The law of entail.
5. The cost, delay, and difficulty of land transfer.
6. The want of drainage, local and arterial.
7. Small irregular fields, with too much hedgerow, timber, and ground game.
8. Unsuitable residential and animal accommodation, misplaced homesteads, and ill-shaped farms.
9. The retention of half the kingdom (£2,500,000 acres) in permanent pasture, much of it robbed, starved, poor, and unimproved.
10. The want of education.
11. A dislike to change, and a comfortable belief in antiquated customs.

SECURITY OF TENURE is one of the most important means for attracting capital. Human nature is alike in town and country. Who, in a town, would effect an improvement with merely annual tenure, or unsecured by a lease, with power to sell or transfer that lease? Without leases London and other great cities would have remained small and antiquated. The nineteen years' lease and the intelligent education of the Scotch farmer and his labourers, have, together, worked well, especially for the landowner; and only require the valuation of tenants' unexhausted improvements to make the system nearly perfect. Mr. Gladstone, in his able speech on the Irish Land Question, assumed that in England tenures were more certain than in Ireland. By courtesy they are, but not by law or contract. In order to satisfy my mind on this point I made inquiries of several of our most eminent landvaluers, whose replies, so kindly given, are as follows:

1. "I do not know how to answer your question, there being no data upon which to base an opinion. In the Home and Eastern Counties I should say leases were general; in the Midland and Northern Counties the exception. You may take this fact, however, as indisputable, that by far the larger majority of tenants would accept leases if they had the chance."
2. "I cannot give you from any data the extent of land under lease in England, but I do not think it can exceed one-tenth of the cultivated portion. I am very doubtful indeed whether the majority of farm tenants would have leases if they were offered, but this is owing to the present want of capital. Once got the capital that is wanted and leases would be a *sine qua non*."
3. "There are no means of arriving at any even approximate conclusion as to the proportion of leasehold to annual

tenure. The difficulty in England is to get the tenant to accept a lease."

4. "I consider that four-fifths of the land in England are held on annual tenure, and the remaining fifth held under all sorts of leases, some for the term of 7 years, and again for the term of 12, 14, and 21 years. I very recently gave the tenants of a large estate in Lancashire, for which I am agent, the option of holding on as yearly tenants or of accepting leases at 3s. per acre more rent than they were asked to pay as yearly tenants; all the tenants accepted the leases at the additional rent."

It is quite true that on certain noble estates, where it is made a point of honour never to change the tenantry against their will, there tenants do not wish for a lease and would decline taking one. The true reason is that they know that they hold at an unvarying or easy rent rate, with fixity of tenure, and they also know that under leases landowners obtain higher rents than without them; for while now all is quiet and undisturbed in the tenant's case, had they leases there might and probably would arise at the termination of those leases, revaluations or other reconsiderations. "But," said I to a tenant of 1,000 acres on such a well farmed noble estate, "supposing that an unjust or oppressive tenant for life should succeed to the estate?" "Oh," said he, "a few instances of wrong-doing would alarm the tenantry; they would change their high farming for a taking-out system, and the estate would soon become deteriorated in value." Again, he said, "The stewards of the estate are well aware of this; so we see no danger of such a kind." They justly observe that the Scotch nineteen years' lease (without valuation of tenants' unexhausted improvements) has enormously increased rents, to the landowners great advantage; and they thus appreciate their own more favourable position. Notwithstanding these facts, I am still decidedly of opinion that farming should be treated as a business, and not as a favour, and that leases, with a valuation of tenants' unexhausted improvements, would attract a greater investment of capital, and improve the class of tenants. I would strongly advise every one who feels an interest in these matters to peruse a work which is full of valuable evidence on most of the points of our discussion. The information it contains is far more copious than it is possible for me to lay before you this evening; and it becomes, just now, of great practical value, seeing that Government has recognised and is prepared to legalise tenant-right in Ireland. No one can for a moment suppose but that it must very soon become legalised also in England as well as in Ireland. In 1849 there occurred the late Mr. Philip Pusey's House of Commons' committee on Tenant-right. A digest of the evidence was prepared by Messrs. Shaw and Corbet, of the London Farmers' Club. A republication of that valuable document may now be had at Mr. Tuxford's, 285, Strand; or of Mr. Ridgway, 169, Piccadilly, price 8s. 6d. It contains the evidence of 60 eminent landowners, land valuers, and farmers, on the following subjects:

Tenant-right, customs of the different counties, pp. 1 to 55.

Cultivation of the different counties, pp. 56 to 124.

Tenure, pp. 125 to 139.

The necessity of legislative enactment to secure or create capital invested in the soil, pp. 134 to 163.

The laws of entail, and the policy of giving enlarged powers to holders of life estate, &c., pp. 164 to 173.

The general benefit that would follow from a recognised system of compensation for unexhausted improvements, pp. 173 to 186.

Farm buildings, pp. 187 to 199.

Permanent improvements, draining, chalking, marling, or claying, pp. 200 to 214.

Temporary improvements, pp. 215 to 221.

Dilapidations, and the justice of giving compensation to the landowner for injury, as well as to the tenant for improvement, pp. 222 to 234.

Advantage of breaking up inferior grass-lands, pp. 235 to 240. In 1849, when the foregoing evidence was taken, we had no land drainage and land improvement Companies. Now such Companies exist, and have at their command an almost unlimited amount of capital waiting for investment, when the laws of entail shall have been reformed, as suggested in the evidence at p. 164. These Companies will form the link that will connect the surplus funds of cities with agricultural improvement.

THE LAWS OF ENTAIL.—One-half of England is owned by 150 individuals, and one-half of Scotland by about twelve. In most of these cases the owners are merely tenants for life, fettered by very limited powers, quite inconsistent with agricultural improvement. Some relaxation has been granted by Parliament, but much more is required. I am glad to see that the succession question will be considered by the Government.

VALUATION OF TENANTS' UNEXHAUSTED IMPROVEMENTS.—No doubt we shall have for England a legalisation of tenants' unexhausted improvements, and a general but clear definition of them. We know that we have a body of able men as land valuers and land agents, forming a society called the Surveyors' Association. I hope that they will soon come to an agreement as to the most important questions, such as drainage of stiff clays, covered yards, fixed steam machinery, &c. We want uniformity of valuation, other things being equal. Now, I can find valuers and farmers in Essex who don't believe in the deep pipe drainage of stiff tile clays, although they would decline to stop the holes in their flower-pots. I look upon stiff soil deep pipe drainage as almost a permanent improvement, provided the outlets are kept free. Mine, done 25 years ago, are all perfect, and likely to remain so for another century. In light and springy soils the drains require more attention. Covered and enclosed yards with paved floors, I look upon as essential to the successful farming of stiff soils. It is a great mistake to suppose that such farms are not stock farms; they will produce stock food abundantly, and with proper management and suitable winter shelter, plenty of stock may be reared and fattened, as I know by experience. Modern agriculture, with its chemical and mechanical aids, and artificial foods and manures, has become quite a different affair from the primitive pastoral period of the past century, and requires in respect of tenure, concurrent and suitable conditions and valuations, giving confidence and support to the extra capital that must be now invested. The incongruous and inconsistent state of our valuations for tenants' improvements or investments is, as a system, or rather as a want of system, discreditable to us as men of business. In one county every improvement is by custom allowed for, in another not one is taken account of. A farmer in Essex may have expended £10 an acre in the draining and chalking of stiff clays, yet not one farthing would be received by his family should he die, and the farm be let the very next year after the execution of these costly investments.

THE WANT OF GOOD FARM ROADS.—In this age of locomotives steam-ploughing engines, weighing from 6 to 25 tons, a farm can hardly be said to be in a fit condition for capital until it has good internal roads. I know of more than one valuable engine stuck fast in the mud and waiting for a dry time.

AGRICULTURAL RESIDENCES.—Landowners often complain to me of the difficulty of finding tenants with capital to take their farms, forgetting that modern agriculture, with its greatly increased capital, is entitled to suitable conditions, very different from the antiquated arrangements of too many of our south country farmeries. Men of capital seeking for farms often say to me, "I would take that land, but the house and premises are wretched, the land undrained, and the whole affair unsuitable for the profitable investment of capital." If a tenant is to bring a capital of £15 to £25 per acre (which I recommend on arable land, and which is often the case in Norfolk and Lincolnshire), he must be treated as a gentleman, as I know to be the practice on some of our noble estates, where the tenants and their labourers rank high in comparison with neglected districts. That is the way to improve the landowner's rental and to feed the people. Modern farmers with education and capital do not wear smock frocks and dine in the kitchen with their labourers, as was once, and is now in some districts, the custom.

POOR OR NEGLECTED PERMANENT PASTURE opposes a great barrier to the investment of capital, the employment of labour, and the production of food for the people; 22,500,000 acres, being one half of our available land, are in permanent pasture, much of it poor, robbed, and unimproved, yielding a wretched produce of probably only 45s. per acre. Under cultivation, with modern improvements, an exactly opposite state of things would prevail. It is a mistake to suppose that arable lands cannot be made stock farms.

TREES AND HEDGEROWS must succumb to steam cultivation and modern improvement. I wish that our Board of

Trade would give us a return of the miles of hedgerows, their average length per acre, and the number of trees, and their numbers to each acre. The length of open ditches and water-courses would be also desirable.

GAME.—The exclusive privilege of sporting would, in many cases, attract tenants of capital. The detested gamekeeper, and too much ground game, often repel capital.

EDUCATION.—The want of it, either for our farmers or their labourers, must be a great impediment to successful agriculture. Scotch farmers and their labourers owe much to their long-established and general education, dating from the time of John Knox—300 years ago. In this respect they have stolen a long march upon us south countrymen, hence the general prevalence of Scotch valuers, stewards, gardeners, and bailiffs in England and Ireland. England is, however, at length awakening to the importance of education, and I rejoice to see that the matter is taken in hand by our Legislature. I have been told, more than once, by large practical farmers of the old school that not only was education not required, but that it would spoil their best labourers. Let us hope that this delusion is gradually passing away. What we require in our agricultural labourers and in ourselves is intelligence; and although it is only the Almighty who can give natural talents, man may cultivate and improve them. Certainly the ability to read, write, and cipher would afford to the labourer, desirous of information and improvement, the means of acquiring both, and thus of becoming a more useful member of society. Ignorance is not bliss even in agriculture, but knowledge is power. Not only will education render the labourer much more valuable to his employer, but it will also enable him, if he has talent and a desire for improvement, to emancipate himself from the mere drudgery of labour, and take a better position in society. Several of my best labourers, aged about 45, who have been with me more than 25 years, can neither read nor write, and they all regret it, especially the one who has managed my steam-engine and machinery for the last 20 years, and who could greatly improve his natural talent if able to read the current engineering literature. The superior intelligence and rapidly-increasing power of our American cousins arises from their passionate love of education, their Government and people having always made ample provision for national education by endowment with lands and by liberal taxation. It has been a paying investment, and, but for their vast area of cheap land, and the consequent high wages of labour, we should have lost ground in the competitive race of manufactures, and perhaps warfare. There are more than 120,000 public schools and colleges in the United States, most of them free. Education would also, no doubt, effect a religious and moral change in our labourers, and much diminish the difficulties of the beer-shop question. At present the uneducated labourer's mind is, comparatively, a blank, receiving no impressions from past or passing events, British or foreign; but educate him, and he, like ourselves, would take a lively interest in the world's affairs. The broadsheets of intelligence in newspapers and books would then give him wholesome excitement, and occupy pleasantly, innocently, and profitably, much of that portion of his time which is now injuriously wasted at the beer-shop. We have already a halfpenny newspaper in Essex, and I hope that the postal charges on them will be greatly diminished. Everybody in America reads a newspaper; there, newspapers were produced at a cheap rate long before we attempted it. We must, both landlords and tenants, expect and prepare for great changes in our agricultural practice. Local and arterial drainage, the utilisation of town sewage, the manufacture of beetroot-sugar or its distillation for spirits, the extensive use of steam for cultivation, and fixed steam-machinery, covered homesteads, &c., will necessitate a considerable relaxation in the stringency of leases, and require large additional investments of landowners' and tenants' capital. General and useful agricultural improvements, both by landowners and tenants, might gradually absorb much more than £500,000,000 of additional capital: it would be a safe and profitable investment. This is no exaggeration; I speak practically on the matter. We have nearly 50,000,000 of available acres, besides uncultivated wastes. The mere drainage of the portion requiring it would, according to our best authorities, absorb more than £100,000,000, to say nothing of many other costly landowners' improvements. The tenants' capital increased by 24 per acre would absorb an additional £200,000,000. On my farm and on many others the

incalculable sums expended by landowner and tenant are very much beyond the amounts I have specified. There need be no fear of our arriving too suddenly at the expenditure I have named: a host of prejudices by the way—let us try and remove them. The multiplication of our population, now numbering 33,000,000 (which 70 years ago were only 10,000,000), will outstrip, I fear, any attempts we may make to provide them with homegrown food. What a happy country this would be if, by the freedom of agricultural action and by the investment of ample additional capital and intelligence, we could produce our own food as we manufacture our own clothing and other necessities, and in the act of so doing employ more of the British people, thus diminishing suffering and pauperism, and increasing the wealth, strength, and content of our country. Experience has taught me that all this could be profitably done, and I pray that those who have the power may be moved to encourage, by suitable and improved legislation, and by every other means, so desirable a result. You will agree with me that the quantity of food we can produce must depend upon the quantity and quality of the manure which we deposit in the soil. Admitting this to be so, our country might be one of the most productive in the world, for not only do we consume all that we grow, but in addition some £70,000,000 worth (solid and liquid) of human food which we import from foreign nations, in addition to millions' worth of food for our live stock. The results of all this, which now pollute our streams, would, if applied to the soil, produce food enough without foreign imports, and spare our paying £3,000,000 annually for birds'-dung from Peru, and taxing the graveyards of the world for osseous remains. But if we have not yet made the land fat by sewage, we have evidently succeeded in fattening the bed of the Thames by pouring into it for many years the results of all the good things that we consume. There can be no mistake about this, for a French gentleman has succeeded in extracting it from Thames mud, and it is reported that he has established a factory at Battersea for that purpose. A series of chemical analyses have shown that there is an ample supply of it on all the mud banks, both on the north and south side of our once salmon stream. Can there be a more bitter satire than this on our national agricultural intelligence? Need we be surprised at this, seeing how many tons of fat pass daily into our river? In conclusion, this is an unfavourable time for arable land farmers, and many will suffer heavy losses. My balance-sheet for 1869 shows a considerable decline from those of former years, as you will see at foot. The difference would have been greater, but that I sold much of my corn before the heavy fall in price:

**BALANCE TO PAY RENT, ALSO INTEREST AND PROFIT ON
TENANT'S CAPITAL ON 170 ACRES.**

1869	£427	13	6
1868	572	13	6
*1867	773	5	10
1866	573	11	6
1865	543	7	4

Let us, then, resolve to amend our agricultural ways, for our own profit, and for the good of our country.

THE APPLICATION OF CAPITAL TO AGRICULTURE.

—At the meeting of the Warwickshire Chamber of Agriculture at Atherstone, Mr. T. Horley introduced his subject in an address, in which he said, it was Lincolnshire where agriculture was carried to the highest perfection, and he quite agreed with Mr. Chaplain that it was the best farmed county in England. He believed that great changes would take place in respect to agriculture in this and other counties, where they were universally behind the Lincolnshire farmers. Nothing, he considered, would have so great a tendency in causing capital to flow into the channels of agriculture as a certainty that the out-going tenant would be reimbursed for unexhausted improvements. There were, however, two sides to a question. The tenants should remember that if they did not do their duty they might be called upon to make good anything which had arisen from their mismanage-

ment or neglect. They should not consider one side of the question alone, and it was only fair that if the tenants asked for a guarantee that the landlords should have a guarantee also. He next referred to local taxation, and showed how unjustly it pressed on real property, and observed that it prevented in a great measure capital being employed in agriculture. They could not shut their eyes to the fact that if a gentleman having £10,000 put it into the funds he was entirely free from those taxes, but if, on the contrary, he laid it out in the improvement of the soil he was called upon to pay rates for that capital. That had a serious effect in preventing capital being employed in agriculture. This question had been debated for many years past, and evidence respecting it was taken before a Parliamentary Committee in 1848. It was the opinion of this Committee and the bulk of the witnesses examined before it, that it should be dealt with by a system of what was called tenant-right, and it was decidedly shown that this would be beneficial both to the farmers and landlords of this country. It was then universally admitted that it was very desirable that the question should be one of early legislation. He feared that many landlords did not understand this question. A rambling discussion followed that went but occasionally to the point, and the following resolutions were ultimately carried: "That the application of capital to agriculture is to a large extent discouraged by the absence of provisions which would secure to the tenant when leaving a farm the value of his capital invested, and the agreements which would ensure repayment to the tenant of money expended by which he has increased the value of the soil, would encourage the application of capital to agriculture by tenants, would add to the permanent producing powers of the land, and would thus materially benefit the landowner." And "That the existing law which places all local expenditure upon land and building, leaving other investments entirely free from such charges, is unjust, and is a great and serious discouragement to employing capital in agriculture."

PAYING THEIR WAY.—A short time since Mr. Mortimer, a gentleman down in the West, sharing in the very general dissatisfaction now abroad, spoke thus at a meeting of the Devon Chamber: "The Central Chamber was opened in 1865, and at present comprised some 180 members, of whom 26 were elected to the council. He was not aware of anything that constituted them the head of the chambers in the country, or that the country chambers should affiliate themselves to the Central Chamber. About fifty chambers had affiliated themselves to the Central Chamber, and sent a hundred delegated members to it, so that the council consisted of 126 members. The self-elected members of the Central Chamber had more weight than the chambers in the country. He did not consider they should place so much confidence in the Central Chamber; and he urged they should have a chamber where they could be properly represented. The chambers throughout the country had no common bond, and often were working in direct opposition to each other." Mr. Mortimer then moved a resolution, which we gave in our paper immediately on this being passed. In answer to Captain Davey, the secretary of the Central Chamber writes a letter, in which he says: "In order that there may be some certainty about attendance of a portion of the council, the twenty-six elected members of the Central Chamber are allowed second-class railway fares, and this takes up fully one-half of the money subscribed by the Central Chamber members." Only imagine, in order to secure "some certainty of attendance," the members of the council of the Royal Agricultural Society, of the council of the Smithfield Club, of the committees of the Farmers' Club, or of the council of the Royal Agricultural Benevolent Institution expending the funds of those Societies in sending each other up to London, carriage paid, second-class! Of course, the secretary then gets on to his favourite topic, and hints pretty broadly at sending round the hat again: "The active and liberal-minded chambers are from time to time increasing their contributions, while others are lukewarm or non-progressive;" while, as he plainly puts it, if the executive would only travel first-class, they would run pretty closely up to the income!

* In 1867 my wheat crop averaged 7 quarters per acre.

THE MANAGEMENT OF A DAIRY FARM.

[We have thought it useful to promote the subjoined correspondence.]

Dear Sir,—You might think me rather bold in intruding; but as I thought the writer of the articles "Northern Farmer" was some one with a sound knowledge of farming, some one that I durst safely follow, not one of Mr. Meehi's stamp, but one both safe and profitable, it encourages me to do so. Though I am a young man, I have been a subscriber to the *Mark Lane Express* twelve or thirteen years. I admired some articles written last winter, signed J. S., but I have a better liking for those signed "Northern Farmer," though both are very good.

I have about 125 acres of good second-rate land, all either naturally dry, or else well drained; also about 14 acres of land that is used to be a wood, but now only a little timber in; this is on a slope, but nearly all dry.

My stock consists of 24 cows at present; I generally have from 17 to 27, the greater number in winter, and the less in summer; also six calves of about five weeks old, from my own cows, though I have only one heifer out of the lot; these are the first I ever attempted to rear. I have three horses, and three carts of 11 cwt. each.

I have 136 Northumberland ewes, tupped with two Lincoln-Leicester tups, bred near Wetherby, due to lamb about the 8th of March. The milk is all sold at 3d. per quart, and fetched from the house; some of it is fetched a mile; it is all ready money, excepting about a dozen customers that pay monthly, in fact 80s. would cover all the bad debts I ever made with milk. I churn a little; being ready money, it varies at times; what we churn is whole milk, not cream; the buttermilk we sell at 1d. per quart, the butter averages here about 1s. 4d. per lb. (16 ounces.) Before tea and sugar became so cheap there used to be a great demand for buttermilk. Some time since I milked 35 cows; but churning a deal, my missus grumbled about it having so much butter making.

The last winter was my first beginning with sheep, partly through having so much grass left on the land at the back end of the year, and then when we came to mow the meadows, the hay was full of the old dead grass; and partly through the writer of the articles, signed J. S., in *M. L. E.*, I bought 60 Cheviot in-lamb ewes, 20 Penistone ewes, and a few what they call Derbyshire Limestones, bred near Buxton. We lost one ewe in lambing, one lamb through sucking in wool; but being rather short of land for them, we gave them a deal of cake and corn, and sold both ewes and lambs to the butcher. I went to the sale at Shrewsbury, in September last, the 3,000 sale, but I thought they sold very dear. I bid hard, but did not get a lot. I gave 48s. and 49s. for my north ewes at York, such would be bought at 40s. and 42s. the season before. What I should much like you to tell me is, for one thing, which way would you do with the ewes and lambs, first as to what, if anything, would you give them besides a good pasture? The ewes are all full mouthed. Would you sell off a part of the lambs, or all, or any of them?

I will tell how I keep my cows. I get from 12 to 15 loads of grains weekly, about two miles from here, at 2s. 6d. per load of 6 bushels; each cow also gets about 4lbs. daily of linseed cake and rape cake, together with 6lbs. of bean-meal, mixed up with the grains and mangolds, at present three times a day; once a day we fodder them with straw; what they leave we bed them with; we give them hay twice a day in summer; they get the same weight of cake and meal with the grains. We turn them out to grass* in April, but they don't

* We think that these fields should be examined well. If ryegrass is plenty, ergot of rye is a disease to which this grass is particularly liable. It consists of occasional black spurs, of variable length, growing in the position of the seeds, and is probably a diseased condition of the seed itself. This disease has nothing whatever to do with the seed, but where it occurs in any quantity it is usually an evidence of a damp condition of the atmosphere and want of drainage. If these spurs are to be found, we would recommend the writer to remove his stock, and especially in-calf cows, to another pasture, as cows eating the ergot will certainly slip their calves.—[Ed.]

go out in the night until the first of June; they were tied up early in October for the winter. I have tried letting them stop out in the day until near December; but they always had a deal of condition, and this is of some consequence, for I let them all go to the butcher. I have tried bulling a few, but they nearly always slipped their calves for several years; people here say it was through being too highly kept; but they never used to do it, and they have always had about 10lb. each cow of meal, or meal and cake per day. I did sell two that had been milked about 13 months for £66 at Christmas, these made about £10 more than they cost me; but they were very well bred, and made a good price, 8d. per lb.; but as a general rule of late they never make near the price they cost. At the present time they are very middling ones at £24 or £25 each; we need to get better at £18, besides the risks attending getting in fresh stock from fairs and markets. My cows used to carry their calves before I got some land that was very poor; it had not had a shilling spent on it for 50 years; it lies near the rock, but fair amount of soil on it; it used to burn in summer if there were 10 days without rain, but now a long drought scarcely injures it. I have limed it three times—with 6 tons per acre once, and 4 tons per acre twice; it has not missed having a dressing of either manure or lime these nine years; it is in pasture, it is full of benty grasses yet, and has a skin of about 2 inches thick of dead grass, something like that from a heath. We put the heavier sheep and lambs on this field last summer, but they did not grow a bit; then we let it get fresh, and put the Cheviots and their lambs on it, but they stopped growing also, yet they all did well on the other land. How do you think it would answer to break it up, and sow it with rape this season? This is a badly-farmed district; we live near what is called the back bone of England: they are almost all of them small farms, nothing but grass, milking six or eight cows, skim their night's milk, and mix it with their morning's fore milk, and retail out at 2½d. per quart. My land consists of four or five such places. The steward, for part of my land, does whatever draining I have wanted done; he has done it all, both carted 3 inch-pipes, and put them in free; they also keep all walls on the roadside. Of such I have 1½ miles in good repair, free also. The rent averages about 60s. the statute acre. I live on the outskirts of the town; it runs near 1½ mile from one end to the other; we are set on to two-thirds of the farm with 25 cwt. of manure with one horse, and for the remainder it takes two horses for that weight. There is horse and cow manure to be had at an average of 4s. 6d. per ton within 1½ mile of any of it, and they will put one-horse barrels of night soil on the land at 1s. 3d. per barrel; night soil and ashes mixed we can have free for fetching. We can get 35 cwt. or more hay to the acre. Swedes and mangolds are worth, on an average of years, 25s. per ton; they come some miles from here by rail, out of York.

All my land was in grass until 1868, when a gentleman came out of Nottinghamshire, and said to me, "Why don't you grow some cabbages and mangolds? This land will grow cabbages and mangolds with any land. Try an acre of cabbages, it will not be much loss if they fail." I did so, and put the manure on the flat surface, and only harrowed it, and got 5,000 plants; we had lots above 30lbs. each; and green crops being a failure, people were quite astonished. Succeeding with these, and the cows doing so well on them, I put in about 5 acres last year, also 3 acres of mangolds, an acre of kohl rabi, and a few swedes; my mangolds would weigh about 25 to 30 tons to the acre, kohl rabi 16 to 18 tons, but they were sown on some of the poorest land. People in this country said cabbages and roots could not be grown, neither could sheep be kept; they could not tell their reason for it, only some one tried a few sheep about 20 years since, and they could not manage them.

I only came into possession of one part of this land at Christmas, the owner having let his mansion; it is all in grass, but about 12 acres that has been part oats, part beans, potatoes, mangolds, and swedes; but it is turnip-sick, for it has had turnips on every other year, he being the only turnip grower for miles. I was thinking of sowing this with oats and seeds;

the fault with corn of any sort here is, being late to get ripe. I have a field of about 7 acres ploughed, and I think of sowing it with oats.

The field which I had the cabbages, &c., was four fields put in one. There was a deal of labour to get it into form so that it could be worked with horses. I have a midden in it of about 250 tons of horse and cow dung. I am thinking of planting cabbages, mangolds, &c. again.

The way we used the cabbages, part was cut with a large turnip cutter for the cows, and mixed with the grains, &c., the ewes got a good many carted on the grass fields; and a portion was given to some wethers feeding off 30 acres of good after-grass. I also sold a lot, about 10,000, to the hucksters about here. I can also get the winter eating of a lot of dry land near this very cheap.

The cows are milked winter and summer in a shippon, about 200 yards from the house. I should like to get a class of cows that would milk well at less cost. I have given since Christmas £127 10s. for four, they were so dear; they are York, and Skipton cows. I have bought five common ones, such as are bred about here, but they have not flesh about them; there is not a good bull kept in this district. I am rather fond of sheep, but know very little about them. I have given them a sack of bran (120 lbs.) every morning for some weeks, but since the storm, two sacks,—and hay as well; and shall have some mangolds to spare for them. I have about 25 acres of grass that nothing has been on since October.

I have written to you just as it came uppermost; it will need some trouble to sort it; it will need some patience; but I shall be heartily glad of any information from you; and if there is a time when you could come so far, I would most gladly pay you for your time. Yours truly,

A SMALL FARMER.

N.B. The sheep last summer we did not mix with the milking stock, I am puzzled what sort of stock to get to fully stock it, as for buildings to tie up in I have abundance.

Dear Sir,—I have received your letter per favour of the Editor of the *Mark-Lane Express*, and being unable at present to pay you a personal visit, shall endeavour to answer you by post as fully as possible.

I must thank you for the highly flattering terms in which you refer to recent articles which appeared in the columns of the *Mark-Lane Express*. You could not I assure you pay me a greater compliment than by looking upon these articles as practical, and capable of being carried out to the full in everyday practice by the ordinary rent-paying farmer, as that is the sole aim in publishing them, and to know that you, or any other reader, has been instructed or benefited, is both pleasing and satisfactory. I consider that if such exceedingly practical communications as that which I have just received from yourself appeared now and again in print, real bona fide descriptions of crops grown for particular purposes, and the amount of success attending their growth, as also the amount of concentrated food consumed by different classes of stock; a much better idea of farming, as it is actually carried out in different districts of the country would be arrived at.

I may say in passing, do not think too hardly of Mr. Mechi, as although he is admittedly too far ahead of his time for the bulk of agriculturists to follow; yet he has done a great deal in pointing the way, and in inducing monied men to give new systems at least a fair trial. Latterly he has refused to answer objections made by practical men to his published statements, a course I would say fatal to his popularity, and to his success as a practical teacher of his favourite pursuit, and one rather surprising in a gentleman whose countenance is the personification of geniality and good humour.

For the size of your occupation I would say you keep a large stock; your ability to do so being explained by the fact of your using so much purchased food in the shape of grains, cake, and bean-meal. But for your feeding liberally with concentrated food you could never have forced milking cattle to such a price as £33 a-head, even although 8d. a lb. was obtained for them. When a man has capital, and possesses sufficient spirit to invest it in these foods, your experience shows that it is a profitable investment, the produce of the animal being longer sustained, its amount largely increased, and the manure made both bulkier and richer in quality. By following the system which you have described, viz., selling to the butcher, when the diminished flow of milk renders it no longer profitable to keep her, it would be ruinous to feed only

with the food of the farm, as high-priced cows could not be disposed of at their original cost, several pounds less having to be accepted, the money which would in more favourable conditions form the owner's net profit being thus irretrievably lost.

The unavoidable deterioration in value that takes place in a herd of dairy cows kept on, and bred from for a succession of years, must always be allowed for in striking the year's balance, as if omitted the true result will not be obtained.

A number of old cows in a herd makes the dairy returns very deceptive, particularly in the case of butter-making, the milk being so much thinner from aged animals, and a second source of loss is thus introduced, the whole amounting to a very considerable sum on the year's receipts. To get rid of loss from this cause many intelligent men sell their cows on the third or fourth calf, replacing them by young animals of their own breeding, each animal on leaving the farm bringing all the money she could ever be worth, the extra price received proving amply sufficient to repay the trouble and expense inevitable in the production of good stock.

Your own experience in having to pay, say £25 for middling cows, is altogether in favour of this mode of management, as it clearly shows that careful breeding and liberality of feeding in conjunction with the ordinary business of the dairy is a great help in raising the annual return from that department of farm business and setting the man who follows it on the high road to success, if not competency.

I am sorry you did not state the exact amount in cash you made from each cow, as facts of that kind are invaluable if only for the sake of comparison, but as the price, 1s. per imperial gallon, is a high one for a country district, I will give you my own opinion as to what should be extracted from each animal.

You feed well, and, judging by the price you pay for them, have in your stall cattle of large frame capable of being forced to yield an abundant flow of milk. Taking the milk given by a well kept cow at 600 gallons, you have, at 1s. per gallon, the highly respectable sum of £30, but as you churn a little, and the price of butter only 1s. 4d. a lb., there must necessarily be some few deductions. That price for butter, even with the large price of 4d. per gallon for butter-milk, is not by any means equal to the price you get for the milk as it comes from the cow, therefore I deduct £3 from the cow's monetary return on that account, and taking £5 to cover the cost of concentrated food, you have still £23 left to pay for the home-grown, servants' wages, your own time and trouble, and interest of money.

I shall be exceedingly happy to know from you at any time whether this calculation is over or under your mark, and how much. Speaking experimentally, I believe it to be highly impolitic to turn out cows that are being milked and prepared for the butcher at the same time, more particularly of course in spring and autumn, the withering blast and drenching rains taking off condition faster than the best food can put it on. As a rule with dairy cows, whether they are kept as temporary or permanent stock, the later they are of being put out by night in spring, and the sooner they are housed in autumn the better it is for their own health and the interests of their owner, although very singular to say, the opposite appears to be carried out in practice.

The reason, however, is obvious, the supply of house food for winter being in too many cases inadequate, stern necessity compels people to resort to such unnatural treatment of the poor dumb creatures. Apart even from these considerations it is short-sighted policy, as the grass nipped in the commencement of its growth is never able to cover the ground and afford a full bite, and by-and-by, when the sun becomes strong, the roots from having no protection get scorched and the land becomes as incapable of affording sustenance to heavy stock as it is in mid-winter.

The remarkably high prices now and lately ruling for milking cattle of a good class is very encouraging to breeders, and every well-bred calf should be reared. It is of no use, however, rearing a badly bred one, as they are not worth the trouble; all such should be sent away the moment they are dropped, whether male or female. A heifer calf pure bred from the sire will, if healthy, even although extremely small when born expand rapidly if well fed, and will always be a decent thing to look at; whereas a miserable cross-bred article, however promising when dropped, will never maintain an equal

appearance on the same amount of food, and will fall very short in value when sold. It is very mortifying when a man has gone to a good deal of trouble and expense to procure a good bull to lose the reward of his trouble by having the calves slipped prematurely. For a year or two in a stock this will sometimes happen to a very distressing extent, and it may disappear for years without the arrangements for the care or comfort of the cattle being in the slightest degree altered. High feeding will not of itself cause abortion, the foods which constitute high feeding being small in bulk, and consequently having not the slightest tendency to overload the stomach, and thereby cause an undue strain on the vessels of the womb, or the embryo which it contains; neither has it the effect of suddenly lowering the temperature of the body, one of the most fruitful causes of untimely birth definitely known.

Although it is usually considered that when a large number of cows in a particular herd cast their calves, the cause is some subtle sympathetic influence unexplainable and undefinable; yet it has often occurred to me that farmers should not rest satisfied with such an obscure explanation of such a troublesome disease. It is but reasonable to suppose that a number of cows, the conditions of whose daily existence are exactly the same, and subject to the same atmospheric changes both in-doors and out, must be very similarly affected, and what will cause abortion in one animal must of necessity have the same influence on its neighbour, particularly if it resembles it in constitution. Careful driving, roomy doors and stalls, regularity in feeding, good ventilation, and a smooth floor to rest on are nearly all the precautions that can be taken in the way of prevention.

A comfortable milking-stall can be got up at very moderate expense, and for the sake of a little paltry economy the animals should not be hampered for room. Eight feet for every pair of cows should be allowed when of a large breed, and on no account should it ever be less than seven. Breadth of the house in the clear 13 feet, divided as follows: 3 feet for trough and fastening, 6 feet standing room, 1 foot for channel 4 inches deep, and 3 feet of path.

By this arrangement the cows must of course be fed from behind, the room given each pair as above stated being ample to permit the food to be taken to them without either annoyance or disturbance. In the case of a large stall with a double row of cows, I would decidedly then feed from the head as the convenience is obvious. The flooring should be of a substantial material, so as to ensure permanence, comfort and cleanliness. Fire-brick of the rougher and cheaper sort suits admirably, always looking neat, and there being no liability to injury from slipping.

The above is the description and dimensions of a stall in actual existence, and which I laid down my pen for a minute to go and measure, so as to give you it correct; it was built about 20 years ago of substantial materials, but without the slightest attempt at ornament, and a neater, more comfortable, or healthy cow-house could not be desired.

You have given immense sums for your cows, £32 each is something enormous; I would like to get two for that amount. Would you not try half-a-dozen or more Ayrshires and judge for yourself as to their capabilities as paying dairy stock? My own opinion is that they are the best breed going, and their progeny when crossed with a Shorthorn bull are handsome animals, of good stamina, and useful for any purpose. A few years ago useful animals of this breed could be purchased in the neighbourhood of Glasgow at from 10 to 12 guineas, at present the same class fetch from 15 to 18 guineas, but mind you an animal at the latter price is a decent one to look at, although smallish to those accustomed to Shorthorn crosses, a rare pair-filler, and keeps herself in good condition on a moderate supply of food. If you wanted to see this breed in her native purity the Glasgow or Hamilton shows would answer your purpose, although it is of no use purchasing prize cattle, they cost a great deal more than they are worth, and disappoint all but those who purchase for showing purposes.

In rearing calves success is easily attainable by liberal feeding, comfortable quarters, and separation while receiving milk. Attention to the latter point prevents sucking, and the absorption of hairs into the stomach thereby, and many lives can be thus saved by attention to a matter so simple. You do not grudge your cattle a little oilcake, therefore I think you will be disposed to give a little to the calves, than which nothing pays better. If supplied to them as soon as they will make

use of it, even in as small a quantity at first as half-a-pound a day, increasing it eventually to a whole pound; it preserves them in excellent health, and is actually a preventive of disease. For instance, it is well-known that the great scourge of young cattle, black-leg, or black-quarter, is scarcely ever experienced amongst those stocks where oilcake is regularly used, even although present and peculiarly fatal in the immediate neighbourhood. A good many years ago an old Aberdeenshire farmer told me that until he confined his calves in separate cribs and allowed them a small portion of cake his losses from black-quarter were most vexatiously heavy, but since he adopted both plans he had been perfectly free from it. His reason for confining them separately was not that which I have given above, but to prevent the strong knocking about and injuring the weak, their injured health and weakened constitutions from that cause making them more susceptible of disease.

You have been most successful in growing cabbage, although not conversant with them as a field crop. I would say the fresh land was the cause of their doing so extremely well; but the same land well prepared ought to grow a larger crop of mangolds than 25 tons, although for a beginning it was not bad. It would be cheaper to grow your own green crops than purchase at 25s. a ton, your land seeming to be easily worked and of easy access, and apparently very well suited to their growth. Green crops being such an excellent preparation for grass-seeds, and, in fact, the only way in which land can be got into proper order for their reception, as large a breadth should be grown each year as circumstances will permit. The very fact of your crop of hay being hard to cut, through the previous year's grasses being present in large tufts, would indicate that the land wants renewing by being put through a course of husbandry, couch and bent having to all appearance taken possession of the soil to the exclusion of the more valuable herbage.

It would be dangerous now to plough an old grass field and sow with rape, as if the sward were not well turned down the young plants could not root; and to have juicy plants, capable of affording a large amount of food, the freshly turned up soil would require to be very rich and full of organic matter, which is seldom the case on old and exhausted pastures. The better way would have been to plough and sow with oats this spring. Grab well and plough down on the removal of the crop in autumn. Grow mangolds or turnips with liberal treatment, and then lay down either with or without a crop. The enormous quantity of valuable herbage grown on a field so prepared when the latter arrangement is followed, being almost beyond belief until proved experimentally. The present season is the one to teach a man how to appreciate the value of laying a field down to grass without a crop, especially if he has a few scores of ewes lambing, as you have. The succulent grasses and rape leaves bring the ewe to her milk at once, and enable her to sustain it unchecked. This is a very important matter, as if the flow of milk is once checked from deficient food she never again recovers herself, and the lamb, instead of being fat, is merely fit for store—and not much good even for that. The lamb that gets a good start, and does not for a single day get an insufficient supply of food, may be almost seen growing, and before they are three months old the whole stock, if it is intended so to dispose of them, may be cleared off at a guinea-and-a-half a-head, and they need not be large lambs either at that price, as 8 lbs. a-quarter at 1s. a lb. is all that is assumed in the above calculation. To have the lambs fat should be the owner's whole care; and it is easily done, if the food has been prepared—the stock not over, but rather under the mark; and the lamb therefore pampered from the beginning. The moment the big price (1s. a-lb.) can be got for them let them go: it relieves the pastures, and gives the mother a chance of putting up condition early, and so being got rid of before the price of mutton falls, by the markets becoming glutted, which they invariably do in autumn. I give you the mixture of seeds which I sowed last April without a crop, although I am not aware that it possesses any unusual merit; but as it did noble service in September and October in finishing a lot of broken-mouthed ewes, and now is carrying the present season's lambs, it may be useful. I may remark, with regard to the proportion of rape, if the land is in high manurial condition, 3 lbs. to the statute acre is ample, as it branches wonderfully when well nourished, and that quantity will completely cover the

ground. If in only middling heart, 4lbs. will not be too much, as the difference in foliage and succulence is extraordinary: 1½ bushels perennial ryegrass, 1 bushel Italian, 2½lbs. cocksfoot, 2½lbs. timothy, 2½lbs. *Poa pratensis*, 1lb. *Poa trivialis*, 2½lbs. *Poa nemoralis*, 3½lbs. hard fescue, 2lbs. meadow ditto, 3lbs. white clover, 3lbs. cowgrass, 2lbs. red clover, 2lbs. alsike, 2lbs. trefoil, 1lb. rape; the whole costing for net cash 28s. the statute acre.

I may notice that a slight dressing of lime—even as little as 3 tons to the acre—on the removal of the green crop, slightly worked in so as to keep it near the surface, is highly beneficial to the grasses, imparting richness of colour and considerably-increased luxuriance, while at the same time, I believe, it sweetens the herbage.

With regard to the class of ewe most likely to be profitable, I decidedly say the Shropshire, if to be had for the value; but there is no use in buying anything that goes beyond the mark, either. For a permanent stock, that would be held over until they had given, say, at least four crops of lambs, one would give a little more for well-bred hoggets of well-proved excellence, so as to have a decent article to look at; but for a stock that is intended to be completely cleared out each year, a class of ewe that makes good nurses and costs little money must get the preference. To have a loss on each ewe when parted with, as should be the case when fancy prices are given (no butcher taking that point into consideration), would make the business all trouble and no profit. In this way the Cheviot sheep which you allude to come useful, as their cost is comparatively small. They stand high as nurses, and fatten readily when relieved of their lambs. From 28s. to 32s. is about as high a price as can be safely given for cast Cheviot ewes; and in general they can be purchased in the neighbourhood of the grounds where they are extensively bred for considerably less. The Falkirk Tryst, held in August, September, and October, is a very central district for procuring this breed; and thousands are annually trained at Larbert station, at the conclusion of each day's market, to be dispersed all over the kingdom.

For a nice stock, that one could be proud of, while at the same time making money by its produce, I think there is nothing to beat the Shropshire Down ewe, crossed by a Border Leicester ram. The lambs from this cross are exceedingly handsome, of fine size, remarkably well-woolled, and easily fattened; and the ewes are nearly as good nurses as if they were pure-bred. So good are they, that a few of those which most closely resemble the mothers may be held over each year, to keep up the stock; and you may be certain that they will not fail to give satisfaction.

In thinking so highly of the Border-Leicesters, I do not at the same time fail to recognize the merits of the Shropshire Down ram, if pure Down stock were preferred to crosses, or when used to cross white-faced ewes. As brought out to the perfection he is to be seen at the Shrewsbury sales; he is a magnificent animal, not easily equalled, far less surpassed. In purchasing rams solely for breeding, prize animals should be rigidly avoided, as the high condition to which the fashion of the day compels them to be forced injures them for reproductive purposes, besides incapacitating them from ever being able to gather their food in the open field, unless under unusually favourable circumstances. From 7 gs. to 12 gs. is enough for any farmer to give for a ram, and half the latter sum will often buy a first class animal. Soundness of constitution, hardness, and activity are more practically valuable than are many of the fancy points which enable a ram to carry off a prize.

Your 25 acres of clean grass will stand you in good stead now, as the lambs begin to come thick on you, and will pay well for the time it has lain idle.

Corn being now cheap, and linseed-cake (the only kind fit for sheep) also moderate in price, a more liberal allowance than is usually the case may be given, particularly while the weather continues severe and vegetation remains dormant. A morning and evening feed of 1 lb. to each animal of cake and corn mixed will not raise a large bill by this time two months; and if with this feed they have a few pounds of mangolds in the day as you propose, and fair pastures, your flock of ewes and lambs will be a credit to you by that time, and worth a large sum in hard coin.

Oats are the better for being crushed, and form a more substantial food than bran, and I think, at present prices, is better value.

Liberal treatment enables a man to clear out his stock early in the season at large and profitable rates. When badly fed they must be held over from necessity, and finished with turnips during the succeeding winter and spring. This mode draws a small farmer into too much trouble, and keeps too much money out; so that I come to the conclusion that the quicker the return in the case of sheep-breeding the larger are the profits. If you have a taste for it, a few of the handsomest ewe-lambs might be retained in "store condition as future breeders;" and then you have an opportunity of judging for yourself.

Wishing you the large amount of success which you certainly deserve for your spiritedness in feeding so highly and in purchasing such expensive stock, and again regretting my inability to visit you and make your acquaintance,

I remain, dear sir, yours truly,
THE NORTHERN FARMER.

THE PRINCIPLES INVOLVED IN THE BREEDING OF ANIMALS.

At the last meeting of the Dorchester Farmers' Club, Mr. W. C. SPOONER, V.S., of Eling, said: Although this was a topic which he had not for many years past brought before a Farmers' Club, yet he could but remember that it was an old hobby which he had occasion to ride at many former meetings. Nothing struck the student of natural history so much as that wonderful provision of Providence for the sustentation and reproduction of animal and vegetable life. There was no spot on earth so barren that there was not found on it either animal or vegetable life. The very sands of the desert were instinct with life. And wherever there was vegetable existence animal life was found—there were animals to feed upon the produce. It seemed a most wise institution of Providence that the power of reproduction should be given to ten, twenty, a hundred fold the extent to which food was raised; the limit was rather in the food supplied for vegetable and animal life than in the power of reproduction. Types were handed down from father to son, from ancestors to posterity, with wonderful exactitude. Nothing could be more wonderful in the human race than the peculiarity of countenance and the disposition to disease. The germ of a disease might have been invisible for a course of years, yet it must have existed in the parent form or it could not have been handed down. This was a subject for astonishment and reverence rather than for anything like ridicule or sarcasm.

The vitality and the types handed down from one family to another through a long course of years, through a long course of ancestry, were exceedingly astonishing. Although we were capable of studying and ascertaining certain facts, and ascertaining what those facts produced, yet the greater part was involved in mystery, and would probably ever remain mystery to us. We, however, could not do better than study those facts so far as was found useful, adopting those principles found to be correct. One of the first things which he proposed to speak to them about was the influence of the parent on the offspring. His object would be to present to them some of the leading principles involved in the breeding of domestic animals, and he should limit his examples to three classes of domestic animals—cattle, sheep, and horses. There were numberless examples in regard to other animals, but to deal with them properly he should have to give a course of lectures instead of a single one of half-an-hour's duration, such as the present. They had all heard of that celebrated work by Darwin on the origin of species, in which he came forward with a somewhat novel doctrine, differing very much from those opinions that had been formerly held. Mr. Darwin was disposed to think—and he brought forward many examples to prove it—that not only were there many groups of families handed down for many years, but that different species had descended from one common origin. He stated in that work

his intention to bring forward in an after-work a great number of facts to support his theory, and after a course of years he produced two volumes on "Animals and Plants under Domestication." If those volumes only proved that a vast amount of reading and research must have been involved in the inquiry into the subject, Mr. Darwin merited their warmest respect and their warmest admiration. Regarding the influence of parents on offspring he thought there was a sufficient number of facts to show that in the case of the three classes of animals he had mentioned the male had the preponderating influence as far as the external form was considered, and that the vital functions in the constitution more frequently followed the female than the male. Although the external form, the general appearance of the skin, and the colour more frequently followed the male than the female, it must be observed at the same time that if they considered this rule without an exception they would be exceedingly wrong. There were sufficient instances to prove that it was usually the fact. He enlarged on this part of his subject, giving many illustrations, amongst them that given by Mr. Darwin, of the Manx cat. This animal is tailless and has long hind legs. Dr. Wilson crossed a male Manx with common cats, and out of twenty-three kittens seventeen were destitute of tails; but when the female Manx was crossed by common male cats all the kittens had tails, though they were generally short and imperfect. Mr. Spooner then passed on to say that before the present day, before the existence of the Royal Society, which was now thirty years old, many experiments were tried in the breeding of domestic animals—sheep, cattle, and others—which experiments frequently ended in failure, so much so that the fashionable doctrine of purity of breed and nothing else held good at the time the Royal Society was established. He remembered the time when no other prizes were given for sheep than those for the Leicestershire class, which had struggled into importance although they were originally cross-bred animals. By and by innovations were introduced into the society, which was obliged to submit to public opinion by giving prizes for other breeds. Mr. Spooner enlarged on the principles of reversion and prepotency of transmission, on both of which Mr. Darwin treats at length in his work on "Animals and Plants under Domestication." He pointed out the effects of "in and in" breeding, furnishing his audience with many practical and telling illustrations as he proceeded. He thought the most perfect specimens of crossing were found to exist with regard to sheep. He ventured to think he was not too bold when he said more science and more practical knowledge had been used in the breeding of sheep than in any other class of domestic animals, if not all the other classes put together. A certain idea had taken possession of the mind with regard to breeding, and then practice and experiment had been adopted in order to produce the result which the mind at first conceived to be just proper, and right. This had been most successfully done. With regard to horses, he thought there had been less science, less practical knowledge, and less success than with regard to any other animals. It was well known with respect to cattle that the prizes at the shows had been confined to almost one purpose alone—that of producing the best animal for the butcher. Although it was exceedingly desirable and very important to afford food for the million and profit for the graziers, yet he thought the subject of milking qualities had been too much neglected—had not met with that encouragement in the fact of prizes being offered as had been the case with other animals. In Scotland the subject had received some attention. No doubt it had been neglected in this country because of the bother which it would occasion the leading societies. The consequence was that time after time the great object had been to produce the most perfect animal in its external appearance, one the most profitable, coming the earliest to maturity. The result of this had been advantages very good and desirable as far as they went. We had now three breeds, and it might be said we had none other of comparative importance—he referred to the Shorthorns, the Herefords, and the Devons. The old milking breeds had been done away with, there being scarcely left a herd of the old Longhorns, which were of great repute for the dairy. He thought it a matter rather for regret that we could not have the dairy breeds as well as the pure animals for the butcher. Dwelling on sheep, he must speak to the eminent services rendered by the late Mr. Ellman in

bringing out and improving the latent qualities of the South-down breeds. Great credit, he thought, was due to those who, whether profitably or not, had perpetuated this breed. The public were greatly indebted to the breeders of pure animals, because when the cross was wanted there was the source from whence to procure it; at the same time, a compliment was justly due to the successful breeders of the cross-bred sheep. Eight or ten years ago he was applied to by the editor of the *Journal of the Royal Agricultural Society* to prepare a paper on the subject of cross-breeding, particularly with regard to sheep. His compliance with this request brought him into contact with some eminent breeders, amongst others the late Mr. Humphrey. This well-known gentleman was a breeder of Hampshire sheep before the Oxford show of the Royal Society. He was struck with the inferiority and unsoundness of his own breed in comparison with the different other breeds exhibited there. He determined, if possible, to effect an improvement. "With this object," stated Mr. Humphrey in a letter, "I wrote to Mr. Jonas Webb to send me one of his best sheep, and he sent me a shearing by his favourite sheep Babraham, which made some good stock out of my large ewes. I went down the next two years, and selected for myself; but the stock did not suit my taste so well as the one he sent me, and I did not use them. I then commissioned him to send me his sheep which obtained the first prize at Liverpool; and from these two sheep, the first and the last, by marking the lambs of each tribe as they fall, then coupling them together at the third and fourth generation, my present flock was made. Not having used any other blood on the male side for more than twenty years, I found some difficulty at first, when putting the first-produce ram to the first-produce ewe, the lambs coming too small to suit my customers. To obviate this difficulty I drafted out the finest and smallest-bred ewes, replacing them with the largest Hampshire Down ewes I could meet with that suited my fancy; still continuing to use the most masculine and robust of my rams to keep up my size. Some of my friends advised me to use a large coarse sheep to these small ewes to remedy the defect; but the larger ewe seemed to me the better way, and that course I pursued. I got rid of my smallest ewes and replaced them with large ones, which gave me what I thought to be an advantage—the using no male animal but of my own blood, the pedigree of which I am now acquainted with for more than twenty years. It has succeeded hitherto beyond what I could have expected. My object has been to produce a Down sheep of large size with good quality of flesh, and possessing sufficient strength and hardiness to retain its condition while exposed in rough and bad weather to consume the root-crops on our cold dirty hills. Independently of the value of the Hampshire or West Country Down in an agricultural point of view for such localities as ours, they produce when slaughtered a valuable carcass of mutton, giving the consumer a good proportion of flesh to the fat, which is a point that may be too much lost sight of. I will, in proof of it, relate an instance which a gentleman told me the other day. When rearing in another county he sent to his butcher for 5 lbs. of mutton. The fat seemed so much out of proportion to the lean that he had the curiosity to weigh the lean. After carefully cutting it out he found it to weigh 4 lb., or only one-fourth of the whole. This anecdote indicates to those who are attempting by crosses to establish a new breed, or to improve an old one, the importance of producing an animal in which the flesh forms a due and sufficient proportion of the whole." Previous to Mr. Humphrey's time—60 or 70 years ago, the original sheep in Hampshire and Wiltshire was uncouth and bony, and had a large Roman nose, with a white face, although the descendants had black ones. It was the custom, in order to effect an improvement, for some of the best men in North Hants to go into Sussex and select the largest, coarsest, and blackest-faced rams they could get. The effect was greatly to improve the breed, but unfortunately for a very long time the North Hampshire men attached too much importance to large coarse heads, thinking that to that circumstance the early maturity of the lambs was due—which Mr. Humphrey afterwards so well corrected. There was a portrait of the old Wiltshire sheep in his essay on "Cross Breeding." The Hampshire sheep had been greatly improved by crossing the ewes with the Sussex rams—the class of sheep upon which Mr. Humphrey first operated. It was worth consideration to show how different breeders had operated in the improvement of the breeds. Crosses had taken

place in Wiltshire and Hampshire, and improvements effected by the famous breeders Mr. Rawlence and Mr. Humphrey, the former of whom acknowledged readily the vast improvement obtained from the sheep of the latter. Some breeders clung with superstitious tenacity to purity of blood, and you would suppose from their talk that their breeds came originally out of the Ark. The New Oxfordshire sheep was a very valuable breed, originating from a cross between the Improved Cotswold and the Hampshire or West Country Down. Passing on to speak of horses he had officiated as judge of horses on many occasions, particularly at the shows of the Royal Society. He had had good opportunities of witnessing what had been done and what had been lamented over and undone. If he were asked in what breed of horses the greatest improvement had been made with regard to the shows he should say unquestionably the heavy cart horse. In this class an amount of improvement had, he thought, unquestionably been established. The horses used for the cultivation of the soil and other purposes in this country were now superior to what they were 25 years ago. For the guidance of the judges had been set the excellent rule that they were not to pay too much attention to size and strength, but that they were to consider likewise activity and symmetry. This operated as a useful precaution. A great improvement had been effected, he said, with regard to the breed of horses. It was much to be regretted that the subject had been so generally neglected. He considered that the Royal Society—to which he himself belonged, and which he greatly respected, had greatly injured the breed of horses in this country, because they had encouraged a certain system of breeding, the inevitable tendency of which was obvious. You could not keep up a certain type without falling into a great error. After crossing and re-crossing, and after improving the animals, you got rid of those very improved animals, and got coarser and inferior ones altogether, in order to carry on the improvement. He mentioned that in the tenth generation there would remain in the offspring only the 1,024th part of one cross. Of late years it had been customary, he said, to give prizes for horses best calculated to produce hunters; one of the conditions laid down was that they must be thoroughbred. Now he thought there was a great mischief involved in that. The object of a Society should not be to produce a rare-show; utility ought to be the leading object. He was glad that this important subject of the breed of horses was receiving public attention in the country. It was fully recognised, he said, that when thoroughbred horses were introduced in the time of James I., they produced an immense improvement in the breed of animals. No one could deny the improvement that racing had established, and one of the strongest pleas in its favour was that it effected an improvement in horses generally. Queen's Plates were consequently offered for competition. Amongst other breeding establishments was one at Hampton. The prizes offered for competition at the Derby and other races were of sufficient importance to induce breeders to try to produce the best and fastest animals. He questioned himself that the slightest benefit arose from the Hampton Court establishment. He should like to see a system for providing useful mares, the rest of the animals being of sufficient weight and power for mounted cavalry and other purposes.

Mr. GEORGE would ask Mr. Spooner whether Mr. Darwin had decided the type of cats when they came out of the Ark—had they tails or not? This, however, would not, he must admit, affect them much as agriculturists. With respect to the type of animals, he thought that as a rule it was affected by the locality and climate in which they existed. The sheep in a warm climate, for instance, instead of being clothed with wool, had long hair like that of the goat. He reminded the Club that in the present day the consumption of animal food exceeds that of fifty years ago, and observed that farmers now go in for early maturity, for getting the greatest quantity of meat in the shortest possible time. Further, while the breeding of sheep and cattle had been found to pay, the breeding of horses had not always been attended with that success. He believed that Mr. Spooner had with justice complained that the breed of horses had not been improved to the extent desirable they should be, in which subject farmers were particularly interested.

Mr. T. CHICK called attention to an important point in the breeding of dairy cows. He admitted that the breeding of horses did not pay, but this was, he said, in his humble opinion

owing to the bad judgment of those who attempted to breed. When you got good mares and good horses—although he believed there was no such thing in this neighbourhood—nothing paid better than breeding cart horses.

Mr. CHAPMAN SAUNDERS did not think that the Oxford sheep were so pure a breed as the lecturer seemed to suppose.

Mr. WOOD HOMER did not think that the pastures of this county were sufficiently extensive for the breeding of horses. The mares would gallop about and disturb other stock. A district for breeding horses with any degree of satisfaction should have a large number of small enclosures. Regarding cattle he suggested the giving of prizes for the form of udder, good appearance, &c. What, he asked, was the object of keeping a cow? For the butcher? No; for the dairy. Experience at Dorchester and elsewhere showed, he said, that there was the greatest demand for cows for dairy purposes. This, he thought, was lost sight of by agricultural societies, and much harm was consequently done. Passing on to speak of the breeding of sheep the speaker expressed views similar to those advanced by the lecturer. The best way he thought was to take a certain type of sire and stick to it through the flock; then the animals would be matched well.

Mr. W. H. HAWKINS inquired of the lecturer whether if he saw a flock of sheep he could tell how they had descended. Regarding the breeding of horses he mentioned that at a certain competition a thorough-bred worth 300 guineas did not gain a prize, while one was awarded to an animal which fetched £15.

Mr. J. G. HOMER, the Chairman, said the lecturer had set forth that the form of the sheep ought to be studied. In his (Mr. Homer's) opinion quality was very much combined with form. The deep fore-quarters of a sheep, the depth of chest, the roundness of ribs, generally indicated a strong constitution in the animal; that was a point which breeders in sheep had adopted for many years. They must go back to Jonas Webb; his sheep were by some considered to be pure-bred animals. He (the speaker) used them for many years; but those sheep to his experience were not thorough-bred Southdowns. They, however, had a point about them which produced constitution; they had a good width of fore-quarters, which Mr. Ellman's sheep never had; this was a point in constitution which all ought to study. Judicious crosses had been the means of establishing thoroughly good flocks. Reference had been made to the Hampshire sheep. What was their origin? They had been shown a print of the Wiltshire sheep. He remembered the former coming by thousands into Fordington Field, and they were of such diminutive had breed that it was said a certain shearer of Martinstown could shear a hundred in a day. Half of them had no wool on their backs, and it was stated that one of them could be sheared while the town clock was striking twelve. It might be safely said that the breeds of Hampshire and Wiltshire had been wonderfully improved by crossing. The quality of the animal was a great study for the present generation. He agreed with the lecturer that the crossed animal was the best.

Mr. SPOONER, in reply, said: Mr. Genge had asked for Mr. Darwin's opinion as to the cat that came from Noah's ark. He declined to answer the question; the subject was too extensive, and, besides, he did not think that theology was one which should be taken up by Farmers' Clubs. Mr. Darwin had raised upon a vast number of facts a certain theory. He (Mr. Spooner) did not pretend to say whether that theory was right or wrong—the theory was that different species—the jackal, hyena, and dog—had descended from the same source; and he carried this still further—he had thrown out his ideas, thereby doing a vast deal of good in ventilating the subject. The original idea was that animals were descended from certain types which came out of the Ark—that was the opinion of a few; but could it be imagined that thousands, millions of animals of various bodies with various shapes could have proceeded from those few animals that came out of that small ark? But that subject was beyond their consideration at present. He agreed with Mr. Genge that climate and locality made a wonderful difference in animals. It had been remarked that this locality was not adapted for the breeding of horses; he (Mr. Spooner) simply recommended the breeding of cart horses, which really were profitable animals to breed. He would refer, in conclusion, to a proposed alteration in the judging at the Royal Agricultural Society's shows. It was proposed, he said that the

judges should be furnished with catalogues showing the pedigree of the animals and the names of the various owners. Now he thought nothing could be so detrimental as that; he should be very sorry to act under any such *régime*. He mentioned that at the Chelmsford meeting he overheard a conversation as to what a terrible thing the judges had done—they had absolutely

given the first prize to Prince Albert's horse; every one would say that they had awarded him the prize because he was the Prince. But the judges had not the slightest idea as to whether the animal belonged to a prince or a peasant.

A vote of thanks to Mr. Spooner was accorded, and the proceedings ended.

THE BLANDFORD FARMERS' CLUB. ROOT CROPS.

At the monthly meeting of this club there was a large attendance of members, to hear Mr. GALPIN read a paper on "The Cultivation of the Root Crop." He said: The preparation for the turnip crop begins immediately after harvest. It is needless now to insist on the importance of autumn cultivation. The time is gone by when the scanty pittance of food afforded by dirty stubbles can weigh for one moment against the advantages which are to be derived from taking time by the forelock, and eradicating the twitch before it has had time to make its second growth. To those gentlemen who have clean stubbles, all I can say is, they have the game in their own hands, and I envy them. Now which is the proper way to set about cleaning stubbles? Here, I think, a great difference of practice prevails. Some persons say, plough your stubbles clean as soon after harvest as you can. Others, don't plough but scarify them, as by this means you get over a greater breadth of work in a day, with the advantage of having all the weeds on the top. Others only half plough, so as to get over the whole of the stubbles as quickly as possible, and then come back and finish them if the weather permits. Of course the great object must be to do as much as we possibly can in a given time. We cannot safely reckon on more than three weeks or a month after harvest to do what is required to be done, as the weather does not generally admit of it. My own opinion is that when the stubbles are not too foul, or the ground is not too hard, the most expeditious way is to scarify with the Benthall or Coleman, as in this case you get the weeds on the top, without any admixtures of earth, but I have generally found that one scarifying is not sufficient. We must go first one way, and then cross it. At this rate very little more ground is gone over than if it were ploughed, except that if get the weeds on the top instead of under. But when the stubbles are very foul, then I believe the most expeditious plan is to plough clean at once, and what we do, to do thoroughly where it can be done rather than go over the whole, and only half do it. Now, in all farming operations time is money. The seasons go on whether the work is finished or not; and that which is not done in the proper time must be very often left undone altogether. If, then, the time for cleaning the stubbles is restricted, it is evident that the most economical plan, other things being equal, must be that which is most expeditious. Now many of you have steam-engines for the purpose of driving thrashing machines, which, unless let out to hire, must stand idle a great portion of the year; and it has often appeared to me worthy of consideration if it pays a man to buy a steam thrashing-machine, why it would not pay him to go to an extra expense in the engine, and add a steam cultivating apparatus to it. The difference between an eight-horse and a ten-horse steam engine would be about £40 or £50, and the cultivating apparatus £250 extra. I do not believe on our light soils steam cultivation in its present form to be more economical than horse-power; still, if we take into consideration the greater breadth of land got over in a day, and I may add the superior quality of the work done, I think it is worth consideration whether a steam cultivator, merely for the purpose of breaking up the stubbles in the autumn, and again in preparing for the barley crop and the turnip crop in the spring, using the engine at other times for the purpose of thrashing, &c., bearing in mind that a gain in time is a reduction of the estimated cost, would, on a farm of 400 acres of arable land, pay. The great objection to hiring seems to be that we cannot depend on getting it when we wish, and if wet weather sets in one is in a fix what to do, whether to send away the machine or go on and risk the state of the weather. At the same time, whilst advocating the use of the steam cultivator, I do not think it will pay unless we can, by its means, reduce the staff of horses kept on the farm

by three or four. Having, then, used our best endeavours to cleanse the land by autumn cultivation, it must be laid up in ordinary for the winter, which should be done by a good ploughing as deep as the land will bear it. If we have been fortunate enough to clean our land in the autumn, I believe on our light soils the less done to it the better, and, above all things, whether on light soils or heavy ones, we ought to be careful to do nothing unless it is in a fit state to work. Very often, in our anxiety to forward the work, we are apt to get on the land before it is sufficiently dry, and do more harm than good. Now there is one point on which I shall be obliged if gentlemen will give me their opinions. A certain portion of the land in course for the turnip crop will have been sown with vetches, or rye, or trifolium, or some other catch grass; which is the best way of treating such land after the crop is fed off? I mean with especial reference to our light dry soils. Ought we to plough it at once, and let it lay some time to gather moisture, or scarify, or raft it, previous to ploughing it? Of course I assume the land to be clean. Again, I am very much troubled with thistles, and without good ploughing I am afraid they are difficult to get rid of. If any gentleman will enlighten me on the subject I shall feel obliged. I believe the great object which we have to attain on our light dry soils is, whilst doing what is necessary for cleansing the land, to avoid as much as possible any unnecessary exposure to the drying winds, or in other words, to retain what moisture we can. I do not enter into the subject of manures for the reason stated above; at the same time I cannot help expressing the regret with which I see around us the great waste of animal manures in our bartons through neglect, and the absence of proper shedding, properly shuted, so as to carry away the rain water, instead of allowing it to soak out the most valuable constituents of the manures; and in our towns and cities, through the present system of drainage by means of sewers, where day by day hundreds and thousands of tons of valuable manure are discharged into the rivers, polluting them, or into the sea, never more to be reclaimed, if we except the infinitesimal portion which we get back again in the shape of guano, which supply seems to be failing us, or at least to be getting dearer and dearer year by year. I believe, with regard to the manures for the turnip crop on poor soils which have been badly farmed, we can hardly err in giving too much manure; but on good land, in a high state of cultivation, we ought to guard against applying too much stimulating manure, as we thereby get an extraordinary development of leaf, whilst the root, from its rapid growth, is more apt to suffer from the frosts of winter.

Mr. FORESTER quite agreed as to the desirability of commencing ploughing as soon after harvest as possible, and in some instances, when the crops could not be got off the ground in time, would plough between the stooks. There was no doubt that the fertility of the ground was derived in a great measure from the atmosphere, and, therefore, the sooner the ground was ploughed, especially where they had couch, the better, so that the sun, which at that time of the year had great power, might burn it up; but whether they had couch or not it was best to get to work as soon after harvest as possible, so as to get not only the benefit of atmospheric influence, but also that of frost, which was a great pulverizer of the soil.

Mr. JOHN KEYNES said that the plan which he adopted was to plough his ground as soon after harvest as possible, then dress it and let it lay for some time, and then plough the manure in. In the spring he ploughed his land for turnip, but not after green crop, for every time the land was ploughed the seed came to the top. He used Coleman's scarifier, which did not bring up the seeds. He thought that they were apt to get

the land too light for mangolds, and it was perhaps best not to plough so much but to get the land fine by scarifying. With regard to artificial manures he hardly knew what to say. He had but a very poor opinion of superphosphate, and thought they ought to use more bone than they did. He did not understand light manures but liked something he could depend upon. Last year he applied superphosphate and bone in equal quantities and had some excellent roots. With respect to steam cultivation, Mr. Keynes expressed himself in favour of it where practicable, and also of the use of the scarifier where the ground was foul.

Mr. H. FOOKES could remember the time when autumn cultivation was not thought of, and when it was considered that the ley would keep dry sheep for a month. He quite agreed with Mr. Galpin that the best way was to do the work effectually at once, rather than go over a large portion of ground and be obliged to do it twice. If they could get their land in good order by autumn cultivation he believed the less they did to it in spring the better for the turnip crop. Mr. Galpin had asked for information as to the best plan to be adopted where turnips followed a green crop. He (Mr. Fookes) did not like scarifying after a green crop, but was in favour of deep ploughing. With regard to artificial manures so much had been said and written about them, and each maker thought his own the best, that he would not say anything about them; but would mention a circumstance which occurred in his own experience. Last year he had as fine a crop of turnips as ever he had. An old mud wall fell down, and he used the material with his farm-yard manure, and the result was that he had the best crop of turnips he had ever had in his life, and not a single one club-rooted.

Mr. J. KEYNES explained that when he alluded to the use of the scarifier it was not after green crop, but for plain stubble.

Mr. BARTLETT said: With regard to the cultivation of turnip after a green crop, last year he had a clover ley, which, after ploughing up, he had double raked, and the turnips were very superior. He thought that if the land was properly cultivated in autumn the less there was done to it in spring the better. With regard to the waste of manure in the barton, the not having proper shoots to carry off the rain water, it had been a crying evil, but it was passing away. Yet there was room for a great deal of improvement in this respect. The most valuable properties of the manure were wasted, and by its loss they were obliged to have recourse to high priced artificial manures. All farm buildings ought to have shutes to carry off the rain water.

Mr. GROVES (Dorset) said, after green crop he prepared his ground with a skim coulter and then with a rim roller, and thoroughly ploughed it, and had a very good crop, for which he took first prize at the last Blandford show.

Mr. T. FRY did not think they could be too quick in preparing for the root crop. The last two or three years there had been great difficulty in getting a good crop on account of the dryness of the season. His plan had been to get as much land ready for the action of the atmosphere as soon after harvest as possible, and, unfortunately, as they were too well acquainted with the Dorsetshire clover as it had been called (and not like the American who said he did not know what couch was), he (Mr. Fry) considered that when the land was scarified it should be gone over with the chain harrow, so that all the couch might be collected, and exposed to the action of the sun, and if this plan was adopted he did not think they would have any trouble of burning it. He considered that if the land was properly prepared by autumn cultivation the less that was done to it in spring the better: for, by disturbing it, they lost moisture. With regard to artificial manures he considered they had been expending too much money in them. He had paid £200 last year, but he did not think he should expend so much this; at the same time he did not consider they could do without bones. The two first prizes awarded last year by the Shaftesbury Club for roots were given for turnips grown on land where no artificial manure had been used.

Mr. H. RICHARDS, in reply to Mr. Galpin's question as to the best mode for the cultivation of turnips after green crops, found it very important to solidify the soil, and therefore was in favour of disturbing it as little as possible in spring. He had seen plants come up and wither away in consequence of the land not being solid enough to retain the necessary moisture. There was an old implement, introduced he believed

into the county by Mr. Fookes' father thirty years ago (the only objection to which was that it required five or six horses to draw it), by which the land was best prepared for the turnip crop. That instrument he often saw lying in the ditch, but if farmers knew more of its value, it would be oftener used. From having a large crop of trifolium last year, not all fed off, he had a considerable proportion to plough in. He only turned it over once, but, by the aid of that instrument, he had as good a crop as he could wish for. The great secret being to solidify the soil, no instrument was more suitable. It was true it was hard to work, and it was a somewhat difficult thing to get men willing to use it, but what of that if it did the work well and thoroughly. He had seen ley lands where this instrument had been used bearing a good crop, whilst in those parts where it had not, scarcely a plant came up.

Mr. FOOKES explained that it was not his father but himself that introduced the Norwegian harrow, the instrument referred to, into the county.

Mr. C. FLOWER fully coincided with Mr. Richards as to the value of the Norwegian harrow. He knew of no instrument which assisted the farmer in getting a good crop of turnips as that. Respecting steam cultivation, he did not think it would be practical to have it in general use without they could have a steam traction-engine attached to the scarifier, and the machines very much simplified. It was a good thing, if possible, to have the land prepared in autumn, but when the wet weather set in it did not always answer. He hoped to see the day when a traction-engine, without chains and wires, would be available for agricultural purposes.

The CHAIRMAN (Mr. Scott) fully endorsed the opinion expressed that the sooner the land was prepared for the turnip crop after the harvest the better.

Mr. GEORGE KEYNES agreed with the lecturer as to the desirability of early autumn cultivation for the root crop, and with respect to the cultivation after the roots were taken up he commenced ploughing immediately. With respect to the Norwegian harrow, he had had one many years, and found it very useful when he broke up a portion of down land, but soon after that it was sent to Spettisbury, and thrown aside. He should, however, he thought, use it again, as so many present had spoken of its value in preparing land for turnips.

Mr. GALPIN, in reply, stated that when he lived at Kinson he never missed having a good root crop, but at his present farm he was not so successful. He thought probably it might be owing in some measure to a difference in the atmosphere. He went on the same principle at his present farm as before, but the remarks which had been made by Mr. Fookes and Mr. Richards threw new light upon the advice given him by their lamented friend Mr. Rawlings, which showed his kindness of heart and desire to assist any one he could. He was riding with that gentleman one day, and in course of conversation Mr. Rawlings asked what he was doing with a piece of down land he had broken up, and on his replying that he had set his men to plough it up again, told him it was the worst thing he could do; and, acting upon his advice, he (Mr. Galpin) stopped the work, the result being that he had a very fair crop. With respect to the observations made by Mr. Fookes as to the mud wall, he believed that the advantage derived from the application arose from the chemical action which took place. It was a well-established fact in chemistry, that by the exposure of any salts potash would be formed, and this by its exposure to the atmosphere, supposing no rain washed it away, would form nitric acid, a very powerful fertilizer. The mud wall had probably been standing for a number of years, and all that time the potash attracted the influence of the atmosphere, and he had no doubt that the extraordinary fertility Mr. Fookes had spoken of was caused by the presence of a quantity of nitrate in some form or other. Mr. Flower had spoken of the advantage which would be derived if a traction engine could be devised to use with a scarifier. In the *Times*, a short time ago, there was a long article giving a description of a newly-invented machine called a road steamer, and he thought by the explanation given that it would be applicable for agricultural purposes. It was formed with three wheels with india-rubber tires, and would go at the rate of eight or nine miles an hour.

On the proposition of Mr. Flower, seconded by Mr. H. Fookes, a vote of thanks was accorded to Mr. Galpin, who, in acknowledging it, proposed the same compliment to the Chairman.

FRAMLINGHAM FARMERS' CLUB.

THE MOST PROFITABLE MODE OF CULTIVATION.

At a meeting of the Framlingham Farmers' Club, Mr. Goodwyn, one of the vice-presidents of the club, in the chair, the subject for discussion was, "Cultivation, or how to draw the largest amount and value of produce from the soil at the least expense." This was introduced by Mr. D. SMITH, Parham, who said the history of a nation celebrated for wealth and power, is in every way intimately connected with cultivation. The soil may be said to be the true riches of a country, for in ancient, as in modern times, nations have increased in wealth, power, and importance, just in proportion as they have cultivated their soils. Commerce and manufactures are no doubt powerful resources for multiplying the wealth and greatness of a nation, but they never have nor never can flourish until the cultivation of its soil has reached a certain degree of perfection. After glancing briefly at the history of the cultivation of the soil from the earliest period, he continued: Our soils are composed of certain substances, having certain dormant capabilities, and there are few soils to which some improvements might not be made, whilst a vast tract of our land is capable of extensive improvement. The art of cultivation differs materially from any other art practised by man. Man can but prepare and sow, whilst the bringing to maturity remains in the hands of an ever wise and indulgent providence. But it is, nevertheless, incumbent upon us to discover the cheapest, simplest, and easiest methods of cultivation. That man who comes to his occupation free and disunited from old customs and prejudices and is willing to adopt sound methods of cultivation is mostly seen to be the leading man in the district; such a man it is true does not always thrive, but, from his being the introducer of new systems, is a benefactor to his country. That "knowledge is power" is strikingly applicable to the business of the farm. Knowledge is a capital of the greatest value in the absence of more available advantages. I have often heard, and from practical men too, that many farmers fail for want of sufficient capital, but more from want of sufficient knowledge. There is no class who rely more on their own skill than the farmers, yet we must admit a great number, perhaps the greater, have not acquired a thorough knowledge of their business. Nor can it be asserted that the cultivation of our soil has yet been brought to that degree of perfection which it is capable of reaching. In a business point of view the intention of cultivation is to obtain the greatest possible amount of produce from the soil, and the farmer's object is to raise it at the least cost—to afford him the greatest profit, and shall I be going too far in saying the more scientifically he farms the more effectually will his object be gained? The first step to this end will be, where practicable, the straightening the old crooked fences, doing away with all useless ones, and cutting down the pollard trees, and dividing the enclosures into sizes, according to the extent of the occupation, varying from 10 to 20 acres, with whitethorn fences neatly kept (but I do not think, however, that large enclosures of pasture would be so desirable). Thus a saving of land would be effected, as well as a saving in economy of management. To show how this applies, I may say a furrow nine inches wide and eleven miles long is equal to an acre; calculating that a plough travels at the rate of two miles an hour, and that it takes three-quarters of a minute for a plough to turn round, a distance of 44 yards is lost during the time of turning. In ploughing a field with furrows 500 yards long, this is a loss of $\frac{1}{4}$ of a mile per acre; with furrows 400 yards long, it is a loss of $\frac{2}{5}$ miles; with furrows 300 yards long, 5 miles per acre; with 100 yards' furrows, 9 miles; with a furrow 50 yards, 18 miles per acre. Our drainage might be equally efficient, and a vast amount of unprofitable labour would be dispensed with—I mean the labour of hedging and ditching—and applied to greater advantage on the land. I would also further recommend the better farming the banks and brews of the fences and ditches, they are but too frequently seen to be

nurseries for the most troublesome weeds. The next step in advance will be to provide a thorough and sufficient subsoil drainage; by this process we shall convert the water into us great a friend to us in enriching our soils as it is an enemy to us in undrained lands requiring draining. Even our forefathers discovered manure added to the soil of but little advantage, as is evident from their lazy, bad systems of husbandry practised to the present day in the remote and unimproved parts of the country. This brings me to the point at which food or nourishment is required. We are all doubtless aware that the ruins of one plant furnish life and sustenance to another, and that vegetation thrives on vegetable decay. Hence the necessity for a more strict observance for the procuring as much as possible, and for a stricter watch against the waste of any vegetable substance upon the farm either before it has passed through the animal or after, and whether in a liquid or solid state. I am sure by a strict observance against the waste of home-made manure—I mean manure made from animals kept upon rich diet, and not merely wetted straw—we should have less occasion for the use of artificial or concentrated foreign manures. I do not, however, mean to condemn their use; I think them valuable auxiliaries, and I am sorry to say I cannot discover how to get on without them; but what I want more strongly to impress upon you is the necessity of first making use of every available cartload of home-made manure before we purchase from abroad. The growing green crops and ploughing-in or, better, feeding off with animals eating a portion of some richer diet may be strongly recommended as an enricher at little expense. Having now divided my farm, drained it, and manured it, I come to the ploughing; and here I should recommend deepening the soil to as great a depth as is practicable according to the description of soil you are working upon, so as to allow and give the plants a more extended space in which to work their roots and to provide sustenance. By a deeper cultivation our crops will be better able to withstand the effects of a dry summer; and the looser your soil, the sooner will the superabundant water percolate through it, and turn that which has proved to you a bitter enemy into a good friend. In addition to the above, completely pulverising the land before seeding it will be found of the greatest advantage. Next I shall call your attention to eradicating as much as possible all vegetation save the one kind sought for. I need hardly remark to you how much easier and with how much less expense is the process of keeping land clean, when once cleaned, as compared with keeping the weeds in foul land sufficiently down to allow the crop a fair chance to grow at all; besides, the waste of nourishment to the crop must be considerable in foul land. As to the rotation of crops, a good cultivator needs no dictation on that head; for that which is prejudicial to the interest of his landlord would be equally so to that of himself. One who keeps and grazes a large quantity of cattle will be able to return to the soil a proportionate amount of manure for any fair cropping which he might adopt. I imagine a sufficient restriction to guard against excess would be a limit of three white-straw crops in five years. With agriculture in its present competitive position with the world, the agriculturist needs the greatest latitude; and, depend upon it, that landlord who acts the most liberally on that head will secure the best, most scientific, and most wealthy tenants. Now, I shall call your attention to the homestead, or the providing sufficient accommodation for cattle, in the shape of sheds and houses. I think I need fear no contradiction from practical men when I assert that the rent of a farm may be nearly, if not entirely, lost from this want of sufficient accommodation. Our forefathers' chief wealth consisted in cattle; and our chief dependence must be on cattle also. How can we enrich the soil without manure? and how can we make a good substantial manure without cattle? The manure-manufacturers may dispute with me; but sound practical farmers will not. Let me impress upon you—the more cattle you can keep, to keep

well, the better it will be for you; and the more rich, nutritious food you reasonably use in feeding, the more will be your profit, indirectly if not directly. I would under this head recommend a more extended system of house feeding in summer, believing it to be economical and advantageous. Now, gentlemen, I cannot recommend a small expenditure per acre to produce the largest amount of, and value of, produce from the soil at the least expense, more than I can tell you that the yard of cloth you can buy for the least money is the cheapest. Farming under the most economical principle possible is expensive, and in many instances, I fear, sufficiently so to be ruinous with the prices of the present time, whilst a more liberal system may provide a bare subsistence, leaving the chance of profit for the return of a fair and remunerative one. We had the advantage of a lecture here a few months since from Mr. Mechi. That gentleman (whom I always like to hear, although I seldom can agree with his ideas, for he mostly propounds some novel scheme which sets us thinking, and may in some instances fructify) advised us to expend more money on our cultivation. We have thought £10 per acre sufficient capital to carry on the business of a farm. But when we are told that it requires to be nearly, if not entirely, doubled to be remunerative, in comparison with other businesses, our thoughts are aroused; and a prudent man, and one who has the means to adopt such management, and who is desirous of seeing his business prosper without reference to the amount of outlay, provided there is a chance of reaping a remuneration for that which he sows, naturally seeks to solve this problem. Now, should it appear that this outlay will prove beneficial, the solution of it, in my opinion, amounts to the fact that we must have security in every sense for such an outlay. Let us look at it in plain business terms, and in doing so, I would ask you what man will buy or advance on mortgage on an estate a sum the interest of which will exceed the amount of the rent the property lets at after first paying therefrom all the fixed demands upon such estate, and is assured against all hidden claims? Then, gentlemen, and not till then, will the capitalist advance such capital; and then, and not till it is clear to the cultivators that such a heavy expenditure will produce such a result, will capital be brought to that amount and invested in the cultivation of the land. Perhaps I have deviated a little from my subject; and to return again to the query you ask me to answer, I must tell you in my humble opinion the largest amount and value of produce can only be grown by a judicious and liberal outlay of capital, and to insure such an outlay, the greatest amount of security is required, with liberal covenants; and these, with God's blessing, will no doubt produce harmony and the best feelings between landlord and tenant, with mutual benefits to each.

The CHAIRMAN expressed his pleasure at Mr. Smith's paper, but said he did not agree with that gentleman when he said that the great cause of failure in farming was not so much from the want of capital as of knowledge, for he should say the reverse was the cause. The main source of good farming must be keeping abundance of good stock and feeding that stock well. To put a sufficient amount of stock on the land required a considerable amount of capital, and then they must put their hands still further into their pockets to feed that stock and to obtain the best possible manure. Mr. Smith rather slandered the farmers when he said they had not knowledge enough for their business, but if he had said they had not capital enough he (the chairman) could have agreed with him. No doubt it gave a man a certain position and importance to be able to say that he farmed 250 acres, and there was a great temptation to a man to take that quantity of land instead of perhaps 140 or 150 acres when he really had only capital enough for the smaller quantity, but let them recollect that with every acre they took their expenses were increased whether their profit was or not. He did not want to go the length Mr. Mechi did, but he would say if the same money that was now made to do for 300 acres were laid out on 200 acres the return would be more satisfactory. The more the acreage was increased not only was there more to pay for rent and tithes, but more for taxes, labour, and the live and dead stock from which profit was not directly received, and in which money must be locked up, and it was only from the stock a man could put on his farm which would produce manure of a rich quality to grow more corn that additional profit could be obtained. He had seen many a man, who had been doing well on a small farm, tempted by circumstances of

one kind or another to take a larger, and borrow the capital and pay interest on it, find his money slipping away without his knowing how or where it went. He agreed with doing away with some of the old fences, and with the pollards (which were rapidly disappearing) but thought the fields might be made too large. In the large open plains there were, no doubt, some means of getting rid of the water which used to run into the old ditches, but he questioned whether the time would not come when there would be a difficulty in having the land lie as dry as it ought. Whether the water was to be permanently got away from large open plains of 60 or 70 acres of good heavy land without very heavy outlay was a great question. Every rational man would agree with Mr. Smith that the greater the care taken of the manure the better, and he knew a good farmer who employed a man whose sole duty was to gather up what would otherwise be wasted. After alluding to one or two other points in Mr. Smith's paper with which he agreed, the Chairman came to the question of giving liberal clauses as to cropping which were gaining ground fast. Mr. Smith spoke of the outlay depending on the security, and of money not being advanced unless the security was good, and he asked Mr. Smith what he meant by security—did he mean a sufficiently long term to take out of the land what he put in? Mr. SMITH said he meant security in every sense of the word.

The CHAIRMAN said a yearly tenant could not be expected to act as liberally to his land as one who had a lease for 8, 12, or 16 years to secure him. He thought that where ample capital was likely to be laid out on the farm, there would be no difficulty in obtaining a long term.

Mr. SMITH said there was other security besides security of tenure.

The CHAIRMAN granted that, but it was the first thing. With respect to other matters, no doubt Mr. Smith in his position felt as he (the Chairman) did some delicacy in alluding to the game question. Those who hired land where game was must hire either as a game farm or have security that they would be compensated for any damage. If they hired as a game farm they had no one to blame but themselves; but if they paid the full value of land under a guarantee that they should not be injured, they had a right to compensation if they suffered damage.

Mr. C. CAPON said it would be impossible to be free from all consequences if a man hired a game farm.

The CHAIRMAN said the game question was one which approached too near politics to be discussed at that Club. One other point Mr. Smith did not allude to, and that was the question of cottage accommodation in proportion to the size of the farm; for it was self-evident that if a man had to walk a mile and a-half to his work, his labour was not worth so much as if he lived on the spot. In that respect, though cottages did not pay a high rate of interest, matters were improving.

Mr. R. GARRARD said when landowners and agents saw that the land was well farmed greater liberty was given to the tenant than was the case at one time—not but that he thought they could not do much better than farm on the old four-course system. With respect to capital, he did not see if a man of energy had £3,000 why he should be cramped up to 200 acres if he thought he could work more. It should be the same in farming as in trade, for a man in trade with £2,000 would take a business requiring £6,000, borrowing the rest of the capital; and if a man could not make farming pay the interest as a tradesman could, it was not worth a man's while to farm.

Mr. W. CHAMBERS, jun.: I fear you can't make farming pay as trade does.

Mr. GARRARD: I think you ought to make it pay five per cent.

Mr. C. CAPON: If money is not worth five per cent. on a farm it ought to be.

Mr. PAUL READ said Mr. Smith had spoken of the necessity for good farm buildings, in order to carry on the business as profitably as it was possible, and it was very cruel that when new buildings were erected more rent was asked. With respect to leases, the Agricultural Relief Association, formed at Stowmarket more than 30 years ago, went on the principle that the tenant should be paid when he left the occupation for the improvements he had made, and should pay for damage he might have caused, and that he thought

would be better than long leases, for a long lease might tend to tie a man too long to the same occupation if he were a bad farmer, and if he were a good one he might wish for a change. As to the question of capital, he would not, with Mr. Garrard, advise a man with £2,000 capital to take a business requiring a capital of £8,000, for he believed he would make a mess of it. If they let a hardworking labouring man have ten acres of land at the rent and rates the farmers now paid, he would maintain himself, and to do so could not make less than £30. If the labouring man could make £30 a-year out of ten acres they ought to be able to make £600 a-year out of 200 acres; for though the £30 the labourer made included his own labour, they would not have so large a proportion of labour by half. He was not an advocate for cutting all the land into farms of ten acres, but he thought there ought to be more than there are. If they wanted to make a man an industrious, steady, good servant, and if they wanted to do away with pauperism let them set before the man the prospect of being able to take ten acres of land themselves one day or another. That would be a thorough reviver of the agricultural community; for let them remember that if there was only one ten-acre farm there would be a dozen competitors who would be saving up with the hope of being able to take it, and thus it would have a tendency to stop laziness and intemperance.

The CHAIRMAN asked if any gentleman had any answer to make to Mr. Read.

Mr. GARRARD would point to Ireland, where there were plenty of small farms. He would wish Mr. Read no worse fate than to be put into a ten-acre farm.

Mr. J. C. KENT: A ten-acre farmer is generally considered worse than a labourer.

Mr. READ said he could point to a man in Framlingham

who held ten or fourteen acres, and had not only paid double the rent most farmers paid, but after eight years was able to pay a still further increase.

Mr. PATTERSON contended that Mr. Read's comparison did not apply, for the £30 earned by the ten-acre farmer included all the labour; and if the amount paid in wages on farms of 200 acres were included he ventured to say many farmers made £600 a-year.

In the course of further conversation, Mr. WOLTON said he knew the generally-received notion was that a farmer ought to have £10 an acre capital, whilst Mr. Mechi had told them £20 would not be too much. He should like to know what was the amount of capital required to farm most profitably without going into fancy farming?

Mr. R. GARRARD said a man who took 200 acres of land ought to have £2,000; that was the amount it was generally considered he should have, but he did not say it was enough.

Mr. C. CAPON observed that it did not matter whether the man had the money of his own or borrowed it.

Mr. SMITH, in a brief reply, said he did not intend to disparage the amount of knowledge existing among the agriculturists of the county, but there were many who really began farming without having previously made it their business and soon lost money enough to induce them to withdraw from the occupation. He did not think they really knew the amount of capital they had in their farms, for when they spent money in draining a certain portion he was not prepared to say what was capital. In that way they were continually putting capital in, and he questioned whether they had so little as £15 an acre employed.

The CHAIRMAN conveyed the thanks of the club Mr. Smith, and the meeting ended.

ON VALUATIONS.

The letting of land grants an occupation of the ground for a specified time, at the end of which, removals and changes of occupancy very frequently happen from differences, failures, dislikes, and private wishes. No term of the year can be found at which a free and clear quitance can be made without the outgoing tenant leaving articles that are fixed and incorporated, and which cannot be removed or taken away. The value cannot be realized by any present method, but must wait the returns of crops and seasons. A loss would be sustained by the removal, and a gain would be acquired by the incoming tenant, who would derive a benefit without having expended a price for its value. The cultivation of the land must be performed and not neglected on pretence of removal, and that the profits would not be obtained; an intolerable damage would thence ensue, and not be borne. The due courses of husbandry must be maintained, as if no removal was intended, in order to secure, as far as possible, the much to be desired perpetuity of occupation. Justice and equity direct that an estimate be formed of unobtained values, and the payment made by the person who will reap the benefits to the person who has provided the sources of advantage. These reciprocities are now well defined and firmly established, and the mutual rights universally admitted. Improvements have been made and alterations are suggested, which will be admitted by the force of circumstances, and the conviction of benefit.

In the early records of the tenancy of land no notice is found of any compensation being made for alterations or improvements, or that any idea had been entertained on the subject of valuations. As the practice increased of temporary possession of land the views were enlarged, and as society multiplied new interests arose which claimed a just and primary consideration. The first notice is attached to the houses or buildings erected on lands for the residence of the occupiers, tenants and labourers, and for the animals and implements, and for the storing and manufacture of the grain crops. The houses were erected by the proprietors, and the tenants covenanted to uphold the proper condition by executing the necessary repairs, and when the tenant had done any improvement by erecting a wholly new building, at his own cost, or by making any beneficial alterations, in many cases the additions remained with the property wholly free and without compen-

sation, being considered as a fixture that was irremovable, and had become a part of the alienable ground. In other cases the improvements were valued by the award of "just men and true," who assigned a value for the benefits conferred on the property. The use crept in very slowly, and required much time, along with a concurrent force and pressure of circumstances, which is ever necessary to establish a permanent arrangement of any business or negotiation. The stipulation was early introduced, which gave the tenant from the landlord the raw materials of repairs, as rough timbers, stones and lime.

The land was used in the triennial cultivation of one-third in the process of following; one-third sown with autumn grains; and one-third in lent crops. All articles were transferred wholly free and without consideration at the end of any tenancy; the grain crops were reckoned equal in quantity to the giver and receiver, and the arable lands in the same condition of quantity and preparation. This simple condition of tenancy had lived with little or without any alteration till about the middle of last century, when the introduction of green and forage crops wholly revolutionized the entire system of agriculture, and fixed a new era in the practice of the art. The crops of different plants succeeding each other altogether varied the labours of cultivation, and very much intermingled the periods of return and the kinds of produce. The nature of the cultivation of land requires a time during which to derive the compensation of outlay of money. The cost of raising a green crop of roots cannot be repaid by the crop itself, as the benefit is extended over the succeeding crops of the rotation. No other business of life is so closely bound to this natural law as agriculture, and a greater risk is incurred during several seasons, which may be favourable or adverse, and the prices of produce are fluctuating and uncertain, demanding a wide consideration of the peculiar circumstances that surround the employment. The original mode of transfer did not provide for the increase of produce that arose from an improved system of cultivation, as it would leave the outgoer wholly deprived of the value of much labour and expense. The arrangement prevented all the confusion that arises from the mixture of new and old tenants being employed on the farm, and it has left its vestiges

is the yet remaining custom of farmyard dung passing free from the old tenant to the new. Even this arrangement is objectionable, as the improved management of one tenant may produce a greater quantity of dung at the end of the lease than was received at the entry. This increase will arise from a greater quantity of straw being produced, which is trifling in comparison with the quantity of grain that has been thrashed from it, neither of which was provided against by the primitive arrangement of a free transfer.

It was very early perceived that no period of the year could be found at which the tenure of land might be terminated without an expenditure of labour and money remaining unpaid to the tenant who left the occupation. The terms of the year were adopted from the Saints' days in the Romish calendar, which were fixed in the months as the times occurred. The mass, or feast-day, of a Saint became a period of time, and was used in the purposes of social life. The feast of St. Michael was fixed on 29th September, and very early became a term of much utility. Martinmas, or the feast of St. Martin, was fixed on 11th November. Candlemas was fixed on 2nd February, and so called from the number of candles used at the ceremony of Purification. Whitsuntide was fixed in May, as the early converts then appeared in white; Ladyday in March, so called from the annunciation of the Holy Virgin. The term of Martinmas is not very distant from Michaelmas, and is found in the same state of the farming produce. Candlemas and Ladyday are nearly placed, and are very similar in the above condition, the manufacture of the crops not being finished that was begun at Michaelmas and Martinmas. The two chief terms of comparison are the May and Michaelmas entry.

The Michaelmas term in September is the oldest period of time that was used in entering and quitting the temporary possession of land. It obtained the first preference with clerical bodies, who granted the first leases of land, and has continued in use over a large part of South Britain. The whole labours of the year come into view in the maturity of the crops of grain, the raising of root crops, the preparation of clay fallows for wheat, and other minor articles of value. The whole assemblage is due to the outgoing tenant to be valued to his credit, and paid to his behoof. The hay in ricks is valued at a fodder price, or the value reduced by the expense of carrying it to market: the straw is similarly valued, or given wholly free—the articles of hay and straw being evermost expressly reserved to be used on the farm. On this point so omission or relaxation has ever been made in all inland situations, where manures cannot be obtained in the full return. The barns are used during winter for the purpose of thrashing the grain crops by the out-going tenant, who gives the straw and chaff in some cases for the delivery of thrashed grains to a moderate distance. The fallow lands of bare clays and of root crops are valued in the rent and taxes of one year—the workings and manure, and in any seeds sown. Dung in heaps; grass leys of one or two years, in a half or a third of seeds and labour; copse woods, by the years of growth; hop gardens and poles, with minor articles of fruit trees and bushes, are all valued by well-known rules, that are much varied by local customs, which differ in the special articles that are subjected to valuation, and also in the rates allowed for compensation. These local usages have subsided into force, and are acted upon accordingly.

The payment of rent by the out-going tenant ceases on the 29th September, and at that period every connection must be severed and wholly discontinued, to prevent the unfriendly interferences and unpleasant collisions that happen during the winter's use of the barns by the out-going tenant, who may remove a distance of much inconvenience. The improvement in this term of quit and entry would be that the in-coming tenant purchase the grain crops just before maturity, when the reaping and storing may be very inconvenient from a distant abode. The grain crops may be reaped and ricked, as is the hay, by the out-going tenant, the contents computed by measurement, and the value fixed; the appearance of the stubble will guide an experienced judgment to reckoning of produce; and the two estimates being added and divided, the half of both amounts will constitute an equitable estimate of value. The amount of valuations may be somewhat lessened by the underwood being wholly managed by the landlord, when the farmer buys at the neighbouring sales of cut articles a quantity for his use, which will prevent the frequent misunderstandings

from the landlord preserving a number of standard trees for timber, which damage the under growths. Timber trees and copse growths are best produced in separation.

The Whitsuntide term, in May, presents a more clear separation between the outgoing and incoming tenant than the terms that have been mentioned, and has obtained a more extensive application in the leases and lettings of land. At that period the entire crops of grains and roots have been wholly expended in the application by the outgoing tenant, and no value remains unattached on these two very principal articles of produce. The grain crops sown in the spring of that year are the property of the outgoing tenant, and there remains for adjustment only the small account of the grass seeds and labour expended in the previous year, which will be grown into a crop of hay for the incoming tenant. The straw and dung remaining on the farm at the term, are conferred to the use of the farm, free from any charge of value from the old tenant to the new. This practice is a remnant of the old arrangement, which transferred the whole crops of all kinds to the new tenant without any value or discrimination, which chiefly prevailed in the southern counties of England, where the Michaelmas term was mostly adopted. In North Britain, the term of Whitsuntide had the largest application, and the practice was the most used of transferring the straw and dung free of any charge or value. Such goods were called "steel-bow," from the Teutonic, "stellen" to place, and "bovy" a field, as being goods placed on land, and attached to it, which were often delivered to the tenants by the landlord, and remained as his property, and to be redelivered at the expiry of the lease. The word being confined to Scotland may be of Scandinavian origin, and merely an inversion of the Swedish "bosteale," a residence or fixed abode. The practice has prevailed from time immemorial, and has acquired a very high reputation as a most beneficial arrangement, and prevents the accumulation of valuations to press upon the incoming tenant. In one sense the truth is undeniable, though a correct feeling of justice and a true sense of equity will reckon the dung and straws as a moveable article, and worth a value to the outgoing from the incoming tenant, as it has been produced by the previous crops, and from the excrements of animals, all which articles are exclusively the property of the outgoing tenant. The condition must be express that it be purchased by the incoming tenant, and a greater quantity may be produced at different terms to alter the equitable interchange of the commodity. But the custom has been long established, and the equity of it is not challenged.

The May term of entry to farms has long prevailed over the whole extent of Scotland and over the North of England. It has been most justly held to be the easiest and most accommodating to both the parties who quit and take possession of the farm. At no other period of the year is there found so complete a separation of the crops and labours of the farm, nor any time at which so fully the processes are ended and being commenced. A wholly entire separation never can be got—the labours of one year are extended into the next, crops sown in the end of one year are reaped in the next, lands are ploughed and fallowed in different seasons, and the grazings of one year are repaid from the following produce that is realised. The grain and root crops are the chief articles of produce, and demand the largest consideration, as from these sources all other productions have their origin. Hence, the foremost place that is ever enjoyed by these productions of the ground. All the straws and hays of the farm are manufactured and converted into dung lying in the yards, or carried to the fields into heaps, and the pasturage of the grass fields has not commenced by a mutual understanding and the general custom, or is expressly arranged by agreement in the lease or tenure of the lands. Grass seeds have been sown the previous spring on the barley and wheat lands after fallowing with manure, and come forward for a crop of hay in the first term of the new occupation. Hence the value of seeds and labour is due to the out-going tenant who has made the expenditure and has not reaped any benefit, to be paid by the in-coming tenant, who will derive advantage from the crop of hay.

The advantages are very great, and well understood, of winter ploughing the stubble lands intended to be fallowed for green crops or autumnal wheats during the next summer. No subsequent cultivation of the soil can ever compensate for the want of the exposure of earths to the vicissitudes of atmos-

pheric influence during the winter months. The old and yet prevailing custom gathers a number of ploughs from the neighbourhood to a "ploughing-day," gratis to the new tenant, when the work is very imperfectly done in a hurry and confusion, and very often at an improper season. The dung for the early green crops is beneficially placed in heaps during the late winter or early spring, and both performances of ploughing the stubble lands and of carting the dung is paid to the out-going tenant by the current rates of labour, along with any work done in preparing the lands for spring crops. These labours are of necessity to be done to prevent any damage to the farm from change of occupancy.

The value of auxiliary manures, as lime, bones, and guano, is awarded in a tenant-right of three years on the original cost and labour. The quantity of dung in the cattle-yards may be computed by allowing a certain quantity to the acre of straw of the previous grain crops. The valuation of grass leys of one year, and of the farm-yard dung that has been applied for one crop, has obtained only a bare mention, and has scarcely advanced into notice once. It may not be thought expedient to increase the transactions at the quit and entry farms, which should be free and easy, and exhibit the least possible appearance of change.

The Lent crops of grains grow into maturity as the property of the outgoing tenant, and are sold by auction in lots to the highest bidders, who carry the lots to different localities. Grains and straws are brought back to the farm in a similar way, which creates much labour and confusion, and an unnecessary loss of time. The purchase of the crop just before maturity will be a very considerable improvement on the old custom of a public sale, but it continues the connection after the term of quit, which should be wholly destroyed, and prevent the inconvenience of distant abodes of business.

The rent of the farm is paid half-yearly, with six months' grace, with the power of demanding the payment of the full

amount at the May term, if the farm be vacated at that time. This arrangement does not remove the anomaly of the incoming tenant paying the first half-year's rent for lands producing crops that are not his property—the purchase of the grain crops prevents the public sale, but continues the connection of the quit and entry.

It is now proposed to break this "steel-bow" arrangement, though the equity of it has not been challenged, and to sever the whole connection on the term day.

The following arrangement of valuations transfers the grain crops on the day of quit to the new tenant, who pays the rent half-yearly, and on the expiry of six months from the entry:

Clay Follows for Wheat.

1. One year's rent and taxes, full value of tillages, dung, seed, and sowing.

Green Crop Lands.

2. Full value of tillages and dung on the crop lands of the previous year, but no rent and taxes, as a crop has been got.

3. Full value of ploughing, seed, and sowing the grain crop of the present year.

4. Full value of the grass seeds, and sowing of the previous spring.

5. Full value of the winter ploughing of stubbles.

6. Full value of any cartage of dung.

7. Full value of the dung in the cattle yards.

8. Value of one year's grass leys in pasture.

The in-coming tenant now pays rent for lands producing crops that are his own, and all connection is wholly severed on the term day.

Objections may be raised against valuations in cases of none being used, as the general desire wishes the abolition where the custom is most prevalent. The May entry has attracted notice from these localities, and it is hoped the arrangements now suggested will appear to be just and equitable, and worthy of being adopted into practice.—J. D.

CHEESE AS AN ARTICLE OF FOOD.

[Prize Essay by Mr. L. B. ARNOLD, of Ithaca, read at the Utica Dairymen's Association.]

So extensively is cheese manufactured in the United States, and so commonly is it used in this community, that, at first thought, it seems almost a needless task to discuss its merits. But there are some objections urged against its use, as well as some considerations in its favour that it may be worth while to notice. A strong presumptive evidence in its favour is the fact of its being derived from milk. From the earliest records of our race the milk of animals has been extensively employed as an article of human food, and has been, by general consent, regarded as both wholesome and nutritious. Among all the multiplicity of foods used for the support of human life, milk is one of the most perfect. It is in fact almost the only food that will, when used alone, support life and maintain health and vigour for an indefinite length of time. The perfect proportions of its aliment are proven, if proof is necessary, by the fact that it is the only food of the young of all mammalia, and that they not only live upon it, but grow and thrive, and are perfectly developed in all their parts. Coming from such a source, it is very natural, and I may say fair, to presume that cheese should partake of the excellent qualities of the material from which it is derived. But there are objections sometimes urged even against milk. There are some people with strong vegetarian proclivities, so sensitive as to object to both milk and cheese, because of disease and a tendency to disease, in the cows from which it is produced. They say that domestic animals are reared under circumstances so artificial, and often so unnatural, as to produce a constant tendency to disease and often disease itself, and that in the case of cows, both may be conveyed to their milk. And hence they object not only to milk and all its products, but also to the flesh of such animals. That the treatment of cows is sometimes so improper as to produce disease that will influence their milk is doubtless true. The swill-milk of the New York city stables is notorious. Milk from cows fed upon the slops of breweries and distilleries, and other improper and unwholesome food, will doubtless par-

take of the food from which it has been derived. But cheese is not made from the milk of stalked cows. It comes from the milk of cows that live in the open country and inhale its purest breezes; that feed upon the fresh green grass as it grows upon the turf-clad hills and valleys, and that drink from the crystal fountains and sparkling rivulets, as meandering along the undulations of the fields, they first start on their journey oceanward. What better circumstances of health for cattle can be imagined than those which, as a rule, surround the herds of the dairy farmer in one of season lactation? Surely, the presumptions in favour of the healthful origin of milk for cheesemaking are strongly in its favour. Another objection sometimes made to the use of cheese, is that it does not fairly represent the good qualities of the milk out of which it was made; that it leaves out a part of the elements of milk, and those that it takes in are so altered in the process of manufacturing and curing, that they make the cheese a very different thing from the original milk. That cheese does not take in all the elements of milk is true, it leaves out nothing, however, that is worthy of notice but the milk sugar, and this is so easily and abundantly supplied by the saccharine matter and starch in the food with which cheese is eaten, that its loss can hardly be said to have any weight in disturbing the just proportions of its aliment. In respect to the idea that cheese, on account of changes made in manufacturing and curing does not represent the milk it was made from, let us look at the facts. They do not look alike to be sure, but appearances are sometimes deceitful and cannot always be relied on to determine important points. That milk must undergo many changes in appearance before it can be assimilated is evident. Milk in the cow's udder, and milk two hours in the stomach of a calf, differ as much in appearance as milk in the dairyman's pail, and milk in the form of a cheese; and yet, that the curd in the former case is uninjured and identical with the milk it was made from, will not be questioned. Nor will it be

questioned that the solid condition of the curd in the calf's stomach is necessary to prepare it for assimilation, for it is one of the steps in nature's own method of converting it into blood. I hold that the conversion of milk into cheese involves the same changes that occur in the stomach of the calf, and that it is only carrying out a part of the process of digestion. Let us compare what happens to the milk in the two cases and see. But first, let me remark, that the active agent in rennet is now known to reside in minute globular bodies called cells, which float in the gastric juice by myriads; that they are the cause of coagulation and digestion when applied to warm milk, whether in the stomach or out of it; and that they are like the globules of cream which they somewhat resemble, mechanically inclosed in the coagulum they have formed, and remain there to continue the process of digestion they have begun. Let us now suppose a gallon of milk to be taken into the stomach of a calf, and a quantity also placed in our cheese tub, gastric juice containing an abundance of digestive cells is applied to each, the one naturally, the other artificially; but with this difference; the quantity which the calf applies to one gallon of milk we apply to 300 or 400 gallons, and consequently one coagulates in ten minutes and the other in an hour. In one case the curd is broken up and kept stirred by the peristaltic motions of the stomach; in the other, with the curd knife and the hand of the dairymaid. The whey separates in each alike, but in one case it is absorbed away and carried into the circulation, and in the other it is carried away artificially. The curds in each case, at first soft, gradually harden till the whey is nearly all separated and they become firm and solid, one rapidly, the other slowly. We may now suppose that the curd in the stomach has assumed its most compact form, and the artificial curd a corresponding condition; that it has been through the press and now lies on the shelf in the curing room. The curd in the stomach full of digestive cells, with new ones in multiplied thousands poured out upon it with the increased supply of gastric juice, is kept at 98 deg. The curd in the curing room, containing only the cells employed to coagulate it, is kept at 70 deg. or below. In the former the digestive process is rapidly hurried on, and in a few hours the hard and tenuous structure of the curd begins to be broken down and appears soft and salvy, and to assume a cheesy texture, as well as a cheesy flavour and odour. In the latter, the process is slow. In a few weeks, instead of a few hours, its firm and tenuous structure begins to yield to the digestive agency, and also begins to soften and to assume the same salvy and disintegrated appearance and the same cheesy flavour and odour of the former, but unaccompanied with its strong animal odour. In the former, the process of disintegrating and softening goes on rapidly, till the whole becomes liquid and is carried away to serve the purposes of life. In the latter it is checked by drying and cooling, so that little change will be noticed for a long time. We now consider our cheese ready for use. It will be seen that all we have done is to carry the digestive process up to a certain point, and there to check it. We have digested the curd till it is just ready to dissolve, and there we hold it. We have the solid elements of the milk in our cheese tub in a good state for preservation, and yet so nearly digested as to require but little aid from the human stomach to dissolve it, and make it ready for the work of assimilation. Is it not plain, from the foregoing, that cheese is a fair representative of the milk from which it is made, and that it is entitled to the reputation we are in the habit of ascribing to it, that perfectly (and nutritious) wholesome luxury? The next objection I shall notice is the one most commonly raised, viz., that cheese is food in a state too concentrated for the human stomach. I shall not dispute this point; for I believe the human stomach was not made to hold food that contained nothing but pure nutriment like cheese and meat. It is too large for such a purpose. Our food must have bulk enough to distend the stomach and bowels, so as to afford a sufficient substance for them to act upon. Cheese will not do this when eaten alone, and hence some people would have us reject it together. But the same objection lies against beef, and pork, and mutton, and all similar food. Shall we reject them also? We do not, and should not, object to meat because of its being too concentrated to eat alone. We remedy its defective bulk by using with it some less nutritious food, as bread, potatoes, or roots; and the remedy is perfectly efficacious. We should do the same with cheese, and the objection would

lose all its force. And this we do instinctively. We never eat cheese with meat, or beans, or peas, or other strong food. We use it in connexion with farinaceous and fruit, with bread, pastry, and the like, and we do so with the happiest effects. The practice which prevails generally in selecting food to use with cheese is as much in accordance with reason as with taste. A little chemistry will illustrate this, and show us that we might, with profit, consume much more cheese than we now do. Chemistry divides our food into two classes; these which go to make up flesh and the framework of the body, and are called flesh-forming or albuminoids; and these which furnish the material for fat and animal heat, and are called fat-forming, or supporters of respiration. We do not use these two kinds of food in equal quantities: we take only one of the former to two and a fourth of the latter. They are found in just this proportion in milk. That it may be seen at a glance in what relative proportions the two classes of elements exist in some of the common articles of food, I have prepared a table, by selecting from some of the latest and best authors, to show what per cent. of albuminoids and fat-forming elements are contained on an average in the kinds of food named:

	Albuminoids.	Fat-forming.
	Per cent.	Per cent.
Milk	3.8	8.3
Butchers' meat.....	14.4	29.9
Cheese	24	31
Wheat flour.....	11.8	74.1
Wheat meal	13	67.6
Rye flour	10.5	72.5
Corn.....	10	68
Buckwheat	9	59.6
Peas	22.4	52.3
Beans	25.5	45.5
Rice	7.5	76.5
Fruits, all kinds	0.5	11.3
Potatoes	2	91

I have said that we consume on an average about $2\frac{1}{2}$ parts of fat-forming to 1 of flesh-forming material, and that is all we can consume. Whatever is in excess of these proportions is of no value. Wheat contains over 6 to 1, while cheese, it will be seen, contains an excess of albuminoids, that is, it has only $1\frac{1}{2}$ of the respiratory matter to one of flesh-forming, whereas it should have $2\frac{1}{2}$. This disproportion comes in consequence of its loss of milk sugar. If eaten alone it would not be consumed to the best advantage. Wheat-flour stands in the opposite relation. It has nearly three times as much starch, &c., as are necessary for, or that can be used with, its albuminoids; and hence, if consumed alone, is used at a great loss, besides the liability to disturb the healthful conditions of the body by its great excess of starch, &c. A moment's thought will enable any one to understand that to use cheese with any preparation of wheat-flour would tend to balance both their excesses, and make them both more valuable and nutritious than they could be alone. And the same is true with all the cereal grains, corn, buckwheat, rice and fruit. The use of cheese, therefore, with every variety of bread, pastry, fruit, &c. is not only proper, but earnestly to be recommended, as a positive aid in preserving a proper equilibrium in the elements of food. Cheese used in connexion with the bread grains, &c., as suggested above, has an economical value that it is well worth while for all purchasers of food to consider. Cheese is an animal food, and may, with advantage, be substituted for meat. At the current prices it is a cheaper food than butchers' meat. The average retail price of the latter for the past season at our markets, after divesting it of bone, has been 20 cents per pound, and cheese the same. But cheese contains more nutriment than meat when equal weights are taken. Meat, it is true, is perfect nutrition, and is all consumed. Assuming no waste, a pound of flesh may make a pound of flesh again. It cannot do more; while a pound of cheese, simply by absorbing water, will furnish the material for more than a pound of flesh. It is, therefore, the cheaper food of the two, and may be profitably substituted for it. But its highest economical value arises from its enhancing the value of other food with which it is consumed. By the figures in the table it may be seen that if a half pound of flour, that will cost only four or five cents, is converted into bread and consumed with a pound of cheese, the two together will furnish

a little more nutriment than two pounds of meat. The figures which represent their value stand thus:

	Flesh-forming.	Fat-forming.
One pound cheese.....	24.	31
One half pound.....	5.9	86
	29.9	67
Two pounds meat.....	28.8	59.8

Two pounds of cheese and the one half pound of flour will cost 25 cents, and the two pounds of meat 40 cents. Cheese sustains a similar relation to all the cereal grains, and in fact to almost all the food derived from the vegetable kingdom, and is therefore used with that class of foods with great advantage. Thus consumed it has an economical value that pertains to no other animal food. We cannot use butcher's meat, for instance, with wheat flour and produce any increased value over using them singly; for meat, as a rule, contains just the right proportions of flesh and fat (1 to 24). It has nothing therefore to offset with the excessive starch in the flour. Hence when meat is consumed with bread, potatoes, roots, &c., all the excess of starch or sugar they contain is wasted. The only valuable purpose they can serve is to supply the deficient bulk of the meat. It cannot possibly utilize them. This relation of cheese to food containing an excess of the supporters of respiration ought to be better appreciated by our people than it now appears to be. We live mostly upon food that contains an excess of fat, starch, or sugar, which we pay for at a heavy expense, without its contributing anything toward the support of life. By a better understanding of the relation that the use of cheese sustains to such food, so much of that excess might be utilized as to be sensibly felt in the cost of living. A large amount of food now consumed without any benefit, might be rendered available. There is another consideration connected with the use of cheese, as above suggested, that I would not have overlooked. I refer to its influence upon health. That a food in which the elements of nutrition are in the same proportions that they are used in sustaining life, is more healthful than a food in which they are in great disproportion, is a fact too evident to need argument or illustration. The nearer we approach to the perfect proportions in the elements of our food, the better must it be for our health. That cheese may be so used as to promote a better relation in the elements of food has been sufficiently shown, and hence the bearing which a more liberal consumption of it would have in promoting health may be inferred. There is still another peculiarity in the use of cheese that I may notice in this connection. It has been previously stated that the coagulation of milk was effected by the aid of minute globular bodies, called cells, that float in the rennet, and that they are enclosed in the coagulum they have formed, and remain there during the process of manufacturing and curing the cheese. All this is true, and more. Unless they are destroyed by some unusual treatment, they remain in the cheese until it is

consumed, and retain their power unimpaired. This may seem a strange assertion, but it is nevertheless true, and may be easily verified. If any one desires to do so, let him take a piece of rich old cheese and dissolve it in tepid water. When it is dissolved, or so softened as to mix readily with the water, apply it to a little sweet milk and keep it warm, and in due time it will coagulate in the same way as by the use of the rennet. If a microscope is at hand, he may see the cells floating about in the water in which the cheese was dissolved. When cheese is dissolved in the stomach the cells are set free, and resume their former efficiency, and become a positive aid in digesting other food. The opinion that cheese will digest other food, quite commonly prevails, and here we may see that it is founded in fact. This peculiarity which belongs to cheese may justly claim some weight while we are considering its merits. Enough has been said I think to show that there are good and substantial reasons for regarding cheese as a wholesome and valuable food; and that it is worthy of a more liberal consumption than it now receives. This opinion is not only verified by the argument offered, but is sustained by experience. As a community, the dairying people of the United States are very large consumers of cheese. They have at all times an abundance of good cheese of their own manufacture on their tables, and use it very freely, and they do so with the most favourable results. A more healthful and vigorous class of citizens cannot be found among us. As a nation, the English people probably consume more cheese than any other nation on the globe. Their annual consumption amounts to 300,000,000 of pounds for 30,000,000 of people, or ten pounds to each inhabitant. In the United States the annual consumption amounts to 180,000,000 for 40,000,000 inhabitants, or four and one-half pounds to each inhabitant. The statistics of mortality in the two nations show the conditions of health and longevity to be rather in favour of the English people. This difference may or may not result from the use of cheese, but in either case it shows that cheese does not hurt them, and that the people of the United States might annually consume more than double the quantity they do without doing them any injury. In conclusion, there are many reasons for commending cheese to a more general use. Besides being, when properly used, a wholesome and nutritious diet; besides being richer in nutritious value than butcher's meat or any other animal food; besides its peculiar ability to enhance the value and improve the healthfulness of other food with which it is consumed; besides the aid it renders in digestion, its readiness for use at all times without loss or trouble in cooking, its convenient form for handling and transporting, the ease and certainty with which it may be preserved for many months without loss or injury that occurs to other food from an excess of salt, all commend it to the favour of the public, and especially to the army and navy, where it could not fail to prove not only a luxury to our soldiers and sailors, but a cheap, healthful, and substantial substitute for the continued use of salt meat.

THE HERD OF MR. SHELDON, OF GENEVA, N.Y., UNITED STATES.

TO THE EDITOR.

SIR,—Thinking a description of Mr. James O. Sheldon's herd might be interesting to some of your readers, I will endeavour to give you some idea of it. His mansion, which is a splendid one, and in which much taste is displayed in the architecture, is situated on an eminence about the centre of his farm. This establishment is complete from the house to the pig-pen. Since the fire, when he lost all his fodder, he has built his cow-house of brick, and it is a very spacious one; the cows occupy one side, and the calves have each a pen to themselves on the opposite side. The cows are milked regularly, and are not allowed to suckle their calves, which are fed on new milk for a time, then mixed with skim, and afterwards raised on milk and linseed gruel. All seemed to be in a thriving condition, and I was glad to see that he did not force his calves. Taking Mr. Sheldon's herd in comparison to others, I have seen herds much fatter, and they varied much in this particular. Some of them were lower in flesh than I expected

them, while others carried much flesh, more especially at the ketch and round bone. These points seemed proverbial in the Oxforde. I was not prepared to meet with so many thick, mellow skins and long hair as I did in this tribe, as the originals at Oxford Royal Agricultural Show in 1839 were not of that character; most of them were thin skinned and fatty, peculiarly suited to the taste of the judges at that time. You may remember, Mr. Editor, that the judges judged the Short-horns at that day by raising the skin with the thumb and finger. Soft handling was *admired*, and by this admiration the Duchesses gained their reputation, which I cannot help thinking was a very great mistake, for from such constitutions sprang many diseases which was attributed to other causes. My experience tells me that a thin skinned animal is always tender: the lean meat is porous, and the fat is blabbery, the tripe and bowels are thin, all corresponding. They take cold easily, and it settles on their lungs, thereby breeding dis-

case, which becomes contagious. I have seen much of this in this country, more than I have in England. Many of the Duchesses inherited it, and breeders in this country patronized this kind of handling because it was fashionable, and many of them suffered much loss from this foible. They were led away from sense and reason by a clique of leaders who had selected this *soft touch*, and who were determined to drive it into the brains of rich men with their tongues and pens, and many a novice with more money than wit was taken in by them. The scene seems to be changed here now, and the thick, mellow skin and long thick hair of the Booth is taking the place of the thin skinned Duchesses. That firm touch, when ripe, is the Booth, is beginning to be appreciated, and the thin skinned ones are dying out or abandoned. You know, Mr. Editor, that the Bates sort was much admired for their *sweet heads*, and you also know that they took most of the prizes at Oxford because the judges were so much pleased with their *soft handling*. Two of these cows were much to my taste: they had thick, mellow skins, with plenty of long soft hair, but they received second prizes under the thin skinned ones. Now I will venture to suppose that this peculiar kind of the "Oxford Strain," or tribe, now owned by Mr. Sheldon were derived from these two cows, if it can be proved. I do not recollect the names, but the three heifers and the bull, coming three years old, distinguished favourites of Mr. Sheldon, are precisely the same quality—Booth-like. Mr. Sheldon called my attention more particularly to these four animals. They have been bred as closely as it is possible to breed them, and Mr. Sheldon is going to continue it still further, although the bull is half brother to the heifers, and other relation very close. He says he shall pursue this course of consanguinity. He believes that as long as they have constitution, which they certainly denote, and he can produce such animals by his course of breeding, he will continue to do so. I do affirm that these four animals are as near perfect as any animals can be: beautiful, thick, mellow skins as can be found anywhere, plenty of long, thick hair, and their quality of flesh cannot be excelled, according to my course of handling. I think they will die as well as Scots or Herefords whenever slaughtered. Still I cannot reconcile myself to this close breeding. It must fail, as it has with others, and I am very anxious to see the offspring from this experiment. This young bull has a very straight top and bottom, a little tucked up in his belly if anything, not at all characteristic of the Duchesses generally, for they are apt to be paunchy. He has no superfluous flesh on his neck, as most Shorthorns have; his shoulder blades are well covered (Booth-like), and his shoulder top as bare as it ought to be, but his shoulder point is not so full as it might be for the condition he is in. This, I think, is a very difficult point for Shorthorn breeders to contend with, more especially in the Duchess tribes. His crops are good, which is another evil in this tribe, and Shorthorns generally. His chine excellent, and his twist good. He has a fine round bone, and a beautiful ketch on the top of it, such that are very much wanted in what are sometimes called *pure bred* Shorthorns. Although his outward thigh was light, the inward part gave him a good twist, and I think this part of the round is considered by epicures to be the best quality when the animal cuts marbled. His tail was well set on and level with the chine, and he denotes as good a constitution as we find in an outward bred animal.

Now, I contend that the skins that cover these four animals protect the constitution, and that closer affinities can be bred in consequence of this protection. But breeders will overshoot the mark, and come to a dead lock, as the noted and veteran breeder the late Sir Charles Knightley did before them. It was precisely this skin and hair that his herd possessed when in their prime, as these four animals now under consideration belonging to Mr. Sheldon so plainly show. Sir Charles took a long course of very close breeding from his *own sort*, and this thick, mellow skin, with plenty of long, thick hair protected his strong constitutions; but as soon as the herd generally began to show signs of weakness in their calves, and they began to grow up with a sickly look, nothing seeming to make them thrive; the skin, however thick and mellow, and the hair, however thick and long, could not save them. This herd of Sir Charles Knightley's dwindled into nothing, entirely from in-and-in breeding. I hope these noted young heifers of Mr. Sheldon's, and the bull from which he intends to pursue the same course that Sir Charles did, will not fall by the experiment, but

I have strong fears that such breeding cannot last; when it once begins to fail, farewell to good breeding. Mr. Sheldon says he shall pursue this experiment; as long as he can breed such symmetry, quality, and constitutions, and, as his purse is ample, he can afford to indulge in a trial of this kind, however unnatural the course seems to be. I know I have lost much by this system of breeding, notwithstanding I have seen as fine animals bred amongst Herefords as the world produced. Old Sovereign was as closely bred as an animal could be. There never was a better bull of any breed in England, or a better stock getter. Probably he has got more prize animals than any bull in England of his day. It is these successful incidents that encourage men thus to breed, but that dead lock must come, and when it does, farewell to good breeding. I tried to persuade Mr. Sheldon to try one of Mr. Booth's bulls of the smaller families, or of Mr. Carr's; but he emphatically pronounced his judgment against this. As long as such animals will sell for 7,000 dollars to *fancy men* in England, with their risk in crossing the water, of course he will breed them; but I cannot help thinking such extravagance will die out. Now, I contend that these animals have bred back to the Alloy, as well as Habbuck, which I am satisfied from history is another Alloy, and from which the skin and hair of the Scot were derived, and that it is these two crosses that have kept up the constitution hitherto; but the test has yet to come, by the continuation of consanguinity. One good out-breeding will stand to build upon, and when there are two out in the Alloy and Habbuck the foundation is still better. How far these animals' pedigrees will apply to the two Alloys will be seen by applying to the English "Herdbook;" but the difficulty is to find out the distinction between the first Alloy and the second, as the produce of the first got so mixed up with the second that it was left *entirely* to the honesty of the breeder, to reveal or conceal as he thought proper, and it is generally supposed that the Alloy before Habbuck is mixed up with the best Shorthorns of the present day. This leads me to believe that these four animals of Mr. Sheldon's are strong productions from both Alloys, and gives them constitutions to produce their like again. May it be so, for I think Mr. Sheldon is trying earnestly to produce uniformly good stock, although his sales and purchases have given him a herd far from uniform in size and quality. I found some blubber in this herd, as well as in the other noted herds of the Duchess tribes, and some cows lacking in symmetry; but I did not find a thick, leathery hide amongst those I handled.

There was a yearling heifer in one of the calf-stalls (the name of which I have forgotten) that was equal to anything I ever put my eye or hand upon. Give me such animals as this, uniformly bred in a herd of Shorthorns, and I will praise that herd as highly as either Lewis F. Allen, author of the American Shorthorn "Herdbook;" or Luther Tucker (sen. or jun.), of *Country Gentleman*; or the late Mr. Tom Brown, editor of the *Ohio Farmer*, could have done it; but to praise a herd to the skies where there is disunion in size, quality, and symmetry is beyond my ability or desire. My attention was more particularly directed to a white cow in a stall, with a young calf by her side (I believe her name was Berlina). A more complete specimen of a Scotch cow I never saw. She had beautiful symmetry, very compact; as fine, thick, mellow skin, with long, thick, waving hair, as ever covered a Galloway; her legs were short, her fore and hind flank as full as a Scot's. Her full crops, meaty chine, straight top and bottom, her full eye and "very short horn" convinced me that she was thrown back to both Alloys, or some other Alloy had crept into the fold, to keep breeders from consanguinity, and that there might be other "closet men" (as Mr. Lewis F. Allen says Mr. Collings was) in England amongst Shorthorn breeders who were aware of the importance of this cross. If Berlina was mine, and I was a Shorthorn breeder, breeding bulls for the public, money could not purchase her.

The Hon. A. B. Conger, of Haverstraw, State of New York, has two cows precisely of the same character; but not, I think, with so *purely* the Scottish look as Berlina. Udora was the name of one of them; the other I have forgotten. These are the Shorthorns I like to write about, for I had rather praise than condemn, no matter to whom they belong.

Mr. Sheldon is breeding Alderneys as well as Shorthorns, and has some fine specimens of their kind; but I think this breed is only fit for fancy men, and are not a rent-paying sort. I am much indebted to Mr. Sheldon for the kindness shown

me, and I sincerely wish him success in his undertaking. I have no objection to his making 7,000 dollars of every animal he breeds; but he will have to come to England for this class of men, for such novices are become extinct in this country. I should say that Mr. Sheldon's farm was well adapted for breeding, worked under a good system, which it seemed to be, and is a very productive one. May he long live to enjoy his pleasant position, and call the attention of Englishmen with more money than brains to take his animals at all risks for 1,000 to 1,500 gs. each. Such men will "bear bleeding." He has everything around him that man can wish; and who can enjoy the comforts of home more than such a gentleman who has a mind capable of appreciating it?

Suppose Mr. Sheldon had chosen the thin-skinned, fatty animal to have tried the experiment he is now engaged in, this in-and-in breeding would have brought them to grief much sooner. There is another class of Duchesse tribe of this character, many of which have died of disease, which I attribute to their thin skins. How many of such animals have met with a premature death in this country as well as in England? These Duchesses of the opposite stock to Mr. Sheldon's were long in the leg, light in the crops, pannychy, and thin-skinned. In-and-in breeding told strongly upon them, and many of them died, even after being nursed with the most tender care; many died in this country before they added much to the stock.

W. H. SOTHAM.

"NO POLITICS" AT THE CHAMBERS OF AGRICULTURE.

At a special general meeting of the Warwickshire Chamber of Agriculture, held at Atherstone, Mr. J. H. Burbery presiding, the Secretary read the following letters, the one from Lord Aylesford, and the other from Lord Warwick:—

Packington Hall, Coventry, March 17th, 1870.

Sir,—I should be obliged by your taking my name from the list of subscribers to the Warwickshire Chamber of Agriculture, as I do not approve of it becoming a political association.

I have the honour to remain, yours,

AYLESFORD.

1, Stable Yard, St. James's, March 26th, 1870.

Sir,—I have received your circular inviting me to attend a meeting of the Warwickshire Chamber of Agriculture on Tuesday, the 29th of this month. Although unwilling to enter into discussion in writing, I feel it due to the Chamber, to my friends and tenants, and to my own character as a Warwickshire landlord, publicly to refer to the recent proceedings of the Chamber, and to explain the reason of my absence from their late debates.

When the Chamber of Agriculture was first established, landlords were specially invited to join, in order that all classes might unite in the discussion of subjects affecting the general good. It was, therefore, with sincere regret that I soon observed a bitter spirit arise, which has since culminated in a direct and most personal attack upon one class—the landlords.

This has prevented my attendance at the late meetings, and I confess that my first impulse, on reading the account of the proceedings at Coventry, was to withdraw my name from the Society, feeling that landlords could not remain silent under such unfair and sweeping imputations, and that unseemly re-remuneration could be the only result. I refrained, however, from this step on the consideration that none with whom I was personally associated had expressed these extreme views, and I should have been unwilling to class them with those whose opinions I felt sure they must disapprove of. That such was the case is proved by the bold and manly conduct of Mr. Ford, who well deserves, in my opinion, the hearty thanks of all who desire to see harmony between landlord and tenant, for firmly expressing his dissent from resolutions which asperse the character of the former, as a class who would knowingly, and for their own selfish gratification, injure men whom they in truth regard, and whose interest ought to be identical with their own. I do not go so far as to assert that the working of the Game Law is not a legitimate subject for discussion by a Chamber of Agriculture, but I will say that, considering how liable it must be to produce antagonism of classes, it should only be entered on in a moderate and kindly spirit.

The opposition to the present state of game-preserving assumes many forms. It comes 1st, from tenants who have seen, either in their own case or in that of their neighbours, injury done to crops by excessive preserving, and who, with every wish to be on friendly terms with their landlord, and without any desire to abrogate the present law, feel that they are entitled to more consideration in this respect.

2nd. From those who do not object to game, but on the contrary, in the words of one gentleman at the late meeting "hope that all tenant-farmers will become game-preservers,"

and whose only object, therefore, is that game should be transferred from the hands of the landlord to those of the tenant.

3rd. From those who wish all game to be utterly destroyed.

4th. From those who care little for game or injury to crops, and only use the cry as *capital* in their endeavour to unsettle and break down the position of landlord and tenant throughout the country.

The first class have my hearty sympathy, and I cannot conceive any reasonable landlord who, if the matter were represented to him in a really kind and friendly spirit, would not endeavour to meet his tenant half-way in this matter.

With the views of No. 2 I fear I do not altogether coincide; and although my friend Lord Leigh has, with his usual generosity, at once fallen in with them, I trust that one who cannot go quite so far will not be supposed altogether devoid of feeling on the subject.

Without going into the argument, however, I may, perhaps, be allowed to say that the circumstances of all estates are not similar, and that this may be shown to apply in the case of Lord Leigh. But further, I cannot agree that it is for the benefit of either party that game should be the property of the tenant. Perhaps, in the first instance, the tenant might be inclined to offer his landlord sport, yet I believe that this would soon die away, and that jealousies would be sure to arise. Even taking it in the most favourable point of view, it would not be a pleasant reflection for the landlord to feel that he was shooting on his *own ground*, on *suffrance*, game which was no longer his.

Then, again, if tenants are to be game-preservers, they must themselves employ keepers, not alone for the game, but as a protection to their houses and flocks (for the poacher will not spare them), and besides perpetrating the injury said to be done by game, they will find themselves saddled with expenses which must tell against their own pockets and their landlords' rents. With regard to No. 3, it will be sufficient to say that, as Mr. Phillips justly observes, it would have a strong tendency to drive landlords from their homes, and the foxhunter must remember that *faces* would be rather pressed for food.

The spirit which actuates No. 4 in their opposition to game is well explained by the remarks of Mr. Richards, who, when good landlords are spoken of exclaims, "Would to God we could find them!" and of Mr. Congreve, who describes contracts as "always broken by landlords." The justice of these sentiments I shall not debate, but there is something to me suspicious in the statement of Mr. McGeachy, in a letter last week, that we are to look to the "*great towns* of England and Scotland" to unite with Birmingham and Aberdeen in a demand for a repeal of the Game Laws.

I was not aware that hares and rabbits had gone so far as to take the streets of Birmingham by storm, and burglariously to enter the dwelling houses of its inhabitants in search of food. If not, to what are we to attribute this urbane indignation? Are we really to suppose that they are only actuated by affectation for the farmers, whose interests they have not always so scrupulously respected, or may they not fairly be suspected of some ulterior views.

Of one thing I am certain, that nothing is more foolish and wicked than antagonism of classes, and that they incur a heavy responsibility who are reckless enough to encourage it, and

hope to take advantage, for other purposes, of the evil spirit which it engenders. And now a few words on the subject of "the battue." I am one of those who would far prefer *moderate* shooting, with a friend or two, throughout the season, to the massacre of a large head of game once or twice in the year, with a dozen guns. Some years since the former custom prevailed; but it is only just to say that improved farming has been the chief cause of the change. Formerly numerous small plantations existed on a farm, and every hedgerow and stubble field was a cover for game; but the close cutting of these has forced high feeding, as game can only now be kept together in compact masses, and if disturbed more than once or twice in the year, is driven over a country where there is no cover, and lost. It therefore becomes necessary, when once disturbed, to kill it. The same thing applies to partridges. I infinitely prefer walking with a good dog, and seeing him work, but this for a similar cause is now impossible, and hence the necessity of *driving*. To conclude, for my own part I can see no good to be gained by legislation, nor can I willingly consent to dangerous interference with private contact between man and man; neither do I see that it is necessary for justice that I should resign my right of game upon my own land; but beyond this I am truly desirous that no tenant of mine should suffer from game in any way that can hurt him, though I will admit that it is difficult, as long as game at all exists, to avoid at times some slight inconvenience; but this, again, is usually allowed for in the original rent of the farm, and, if game is abolished or taken out of the landlord's power, you will find his farms put up to auction and the last penny of rent exacted.

I have no wish to see a *rabbit* on my lands, neither do I desire an overstock of hares, and if (as will sometimes happen) they inadvertently get a head, I will do my best to control them. Further than this, I should be willing in extreme cases, which I trust would not often arise, to have the damage valued by a friend on either side. I am far from saying that there are not instances of hardship, which I much regret, but I believe that, as a general rule, if tenants will not show distrust of their landlords, and the landlords on the other hand dismiss all selfish feeling, and sacrifice *excess* of game preserving to the benefit of their tenants, these unpleasant feelings (unless otherwise fostered) will soon subside, and a better understanding be come to without the aid of legislation.

I remain, sir, your very obedient servant,

WARWICK.

To the Secretary of the Warwickshire Chamber of Agriculture.

LOCAL TAXATION.—A special general meeting of the Lincolnshire Chamber of Agriculture was held at Lincoln, when Mr. Charles Bramley read a paper on the above question. The discussion was carried on by the Chairman, Mr. Ashlin, Mr. Trotter, and others, and the following resolutions adopted: "1. That in the opinion of this meeting the existing tax collected under the name of Poor Rate bears exclusively and unjustly on income arising from real property. 2. That the exemption from the Poor Rate assessment of income arising from personal property is not only unjust, but also impolitic, and prejudicial to the public interest. 3. That this tax indirectly increases pauperism by impeding industry and enterprise, and discourages the application of capital to the employment of labour and the production of food. 4. That the tax has an injurious bearing on house property, and presses especially on investments in improved dwellings for the working classes, and limits the demand for the labour of the skilled and unskilled artisans. 5. That the general tendency of recent legislation having placed the management of Poor and County Rates under boards and auditors, controlled by a central power, has to a great extent removed the objection that the maintenance of the poor, the highways, and the other purposes for which these rates are levied, are strictly local duties, and should therefore be defrayed by a local tax. 6. That the majority of county and borough voters are ratepayers, but not generally large money owners, and are therefore deeply interested in the removal of the present exemption from Poor Rate of income arising from money however invested or employed. 7. That this Chamber do therefore urge the Central Chamber to do all in its power to influence the Government to take up the early consideration of the incidence of Local Taxation with a view to the assessment of personal property to its fair proportion of the

burdens of the country, more especially as it is contemplated to further increase the pressure of Local Taxation by new rates for the maintenance of roads and education."

HOW TO GET UP AN AGRICULTURAL LEADER.—

We have seldom seen a more barefaced piece of literary "crib," and a more unblushing advertisement, than that of which the paper calling itself the "organ" of the Chambers of Agriculture was guilty last week. Its first leading article is taken almost bodily from the columns of our esteemed contemporary the *Economist*, and done so, sooth to say, in a patronising style! Surely, if it be the "organ" it represents itself, among all the "grinders" in the chambers, it might have found one to turn the handle of an original tune on the malt-tax. The advertisement, however—after the *Economist's* air—is its own, and played out with an effrontery that none but one of those foreign pests to Mr. Babbage could have displayed. Petitions in favour of repeal or reduction of the malt-tax ought, we are told, to be sent from every town and village; and forms of petition can be had (we give the advertisement gratis) from "the secretary of the Central Chamber of Agriculture. Address, the Salisbury Hotel, Fleet-street." Very ingenious certainly; but will the tub thus thrown out catch the whale? We fancy not.—*The Farmer*.—[The secretary of the Central Chamber may advertise himself at "the Salisbury," but, as we have said before, he has no office of any description at that hotel; and if his forms of petition be kept there, it is difficult to see where these can be stored, unless it be in the coal cellar.—Ed. M.L.E.]

THE GAME LAWS.—At a meeting of the West Kent Chamber of Agriculture held at Cranbrook, the Earl of Darnley in the chair, the following resolution was proposed by Mr. Chittenden,—"That this Chamber is opposed to legislation between landlord and tenant, but considers that progressive cultivation and successful farming require the ground game to be under the control of the tenant." Lord Holmesdale moved, as an amendment,—"That this Chamber, while entertaining the strongest opinion that an excess of game is prejudicial to agriculture, is also of opinion that the exaggerated statements made from time to time with regard to game are a serious hindrance to the settlement of the question." Mr. Hodson also moved, as an amendment,—"That, having regard to the interests of agriculture, this Chamber is of opinion that there should not be an over preservation of game, and that a right of action should lie for any damage sustained thereby unless the party preserving has, by means of walls or close fences, used his best endeavours to keep such game within his own domain; and that it shall be lawful for hares and rabbits to be destroyed by tenants and others on whose lands they may be found, at all times of the year, without any licence duty, notwithstanding any covenant to the contrary, the tenant first repaying his landlord any compensation he may have received from him in reserving the right of game." Both amendments were negatived, and the original resolution carried.

THE WORTH OF THE LABOURER.—He had a man, who he thought he did not exaggerate in saying was worth double to him of any man he had on his land; that man was a most intelligent man; if he put a perfectly new machine, which he had never seen before in his life, into his hands, he would not break it, but would learn how to work it in 24 hours—to conduct it and carry out all its operations with singular zeal and intelligence. If he wanted a piece of land sowing with seed—if he wanted this man to sow it with two bushels or with one bushel and a-half, he would see it regularly and uniformly done. Would anybody tell him that the man who could do those things was an uneducated man—a dangerous man—and likely to be one of the arabs of society? The man who could do that, and many more things he would not weary them with relating, could neither read nor write. An honest or a better fellow did not exist, or a man who did his duty better in the position of life in which it had pleased God to place him. Would they greatly improve their labourers by that rate-supported education? He was most anxious that every poor man's child should be able to read and write and cast accounts to a certain point, and above all that education should be formed upon religion and the bible. But when it was proposed to carry out a system of Government education, which was to be paid for out of their pockets, he was quite certain men would ask themselves, "Is it fair and just, and is it to our interest?"—*The Rev. H. Smythies at Leicester.*

LAVENHAM FARMERS' CLUB.

THE TENURE OF LAND.

At the March monthly meeting of the members of this club, Mr. MANFIELD read a paper on Land Tenure, in which he said: The land suffers not so much for want of capital as for want of security for that capital. My own opinion is that all land should either be let upon lease or upon a well devised system of tenant-right. I prefer leases because they give greater liberty to the tenant in the way of cropping than may be given under a system of tenant-right. I conceive that lease to be the best which will secure the best rent to the landlord and the greatest profit to the tenant. I have drawn up a lease and will bring before you the points in which it differs from many. From the list of reservations, pollard trees growing upon, or in fences adjoining arable land, are excepted; the exclusive right to game is reserved to the landlord with certain exceptions; if by fair and legitimate sport we can keep our landlords and country gentlemen living amongst us, it is desirable to do so; it contains a provision that it shall not be terminated without two years' previous notice in writing from either party. It is better for all parties to come to an arrangement as to the future some time before the end of the unexpired term. And I will go as far as to say that if a landlord refused to come to terms as to the future, two years before the expiration of a lease, I should take as much as possible out of the land, or put in as little as possible; if on the other hand a tenant would not come to reasonable terms, I should feel perfectly justified in giving the offer of the farm to another when the lease had nearly expired. I do not think a tenant can benefit himself by lowering the condition of his farm for a longer period than two years before the termination of his lease.

Clause 2 authorises the tenants' executors to assign to any responsible person, if the landlord shall decline to take the tenant's interest at a valuation, which is but fair.

Clause 3. The tenant to have a pecuniary interest in keeping up the repairs, he paying for half the labour in keeping up the buildings, &c., in repair, and all the labour in keeping gates, &c., in repair. All the fust to be put in repair by the landlord, and all materials to be found by the landlord.

Clause 8 allows the tenant to sell any article grown upon the farm, such as straw or roots, upon condition that he buys back an equivalent in oil-cake or feeding stuff. I think it most desirable that the tenant should be able to do this. I think this liberty should not be extended nearer than eighteen months to the termination of the lease, which would insure that all the produce grown upon the farm (except the corn, grass, or seeds), in the year next preceding the termination of the lease, should be consumed upon it.

Clause 9 gives the tenant liberty to farm and arable land in any place he pleases, except in the last two years, when it must be farmed on the 4-course system. It is here that the lease has the advantage over the tenant-right.

Clause 10 provides that if either landlord or tenant desire it, the landlord must provide tiles for draining, and can charge the tenant with the cost of an efficient man to see that they are properly put in.

Clause 16 provides that if any straw is destroyed by fire, the value of such, at foddering price, shall be laid out in the purchase of artificial food, to be consumed by stock, or in artificial manure to be used or left upon the land.

Clause 17 provides that the tenant may course hares during the coursing season; that he may kill the rabbits (except in April, May, June) at any time, or in any way that will not interfere with winged game. If this was generally adopted it would wonderfully lessen the estrangements and ill-feeling which subsist, and ought not, between landlord and tenant.

My experience of rabbits has been somewhat extensive; for several years the damage caused by them on a comparatively small farm exceeded £100 a-year, during which time the landlord persisted in saying there were none. I suffered so severely that had not an alteration been made I should have given the farm up, but after a bit I was allowed to kill the

vermin; the landlord expressed his surprise that there were so many. I afterwards had a lease of the same farm with a right to kill rabbits if they did me material damage. I was never troubled with them after. I cannot believe that a landlord would preserve such vermin if he really knew the damage they do; they are the greatest pests a farmer has to contend with.

Clause 19 provides that the straw and chaff and coider arising from the last year's crop of corn, thrashed before the expiration of the lease, is to be thatched, the thatching to be paid for by the in-coming tenant. Before the lease is forfeited for non-payment the rent must be demanded, and before the lease is forfeited for the breach of any stipulation it must be shown that the tenant will not submit to an award of arbitration.

Valuation Clause contains the usual conditions, except that it provides that the cost of draining is spread over a greater number of years than usual—

Of 30 inches deep 3 years,	
40 " " 5 "	
48 " " 7 "	

the greater the depth the greater the cost, and the greater the efficacy and durability. Therefore in future the time should be extended. I have inserted the usual conditions as to thrashing and carrying out the last year's corn, but I think they may be improved upon in this way: Let there be a fixed charge—say, of 1s. 6d. per comb for thrashing and carrying out last year's crop of corn, and 1s. 6d. per bushel for trefoil, and 2s. 6d. per bushel for clover-seeds. If the out-going tenant cannot come to terms with the in-coming tenant about the carriage, &c., he can get some one else to do it for him. I have heard valuers say that the thrashing is often more bother than all the rest of the valuation account.

The Mutual Clause contains a provision in case of a dispute arising as to the meaning of any part of the lease, and it provides that it shall be submitted to arbitrators who shall have power to settle it.

Mr. R. HAWKINS said they were not overstocked with game in that district, but when game was allowed to get ahead he did not know anything more injurious. He had no doubt many of them would agree that the Legislature ought to interfere, and not allow tenants to be over-run with game under any circumstances, whether the landlord interfered or not. As to rabbits he thought they should be considered as vermin, the same as rats, and destroyed.

Mr. T. P. HITCHCOCK said: Mr. Manfield had dealt gently with the question of game. Some people talked as if the Game Laws were peculiar to England, but they would find upon inquiry that they existed in other countries as well, and the law said everywhere that the game belonged to the owner of the soil. Indeed what other inducement would there be for a gentleman to remain in the country if he could not have his country sports. He thought, however, that the Game Laws ought to be restrained within proper bounds. It was a great hardship where a farmer hired land on the understanding that only a moderate quantity of game was to be preserved, and then the landlord afterwards let the shooting to someone else; perhaps it might be that the landlord died, and the next man, not caring about the shooting, let it to some one, a London stock-broker perhaps, who having no land, did not care a bit about the tenants, and the farmer had his crops destroyed by the abundance of game. Where a tenant-farmer had hired his land on certain conditions and his crops were injured, he thought the Legislature should step in, so that he was recompensed for all his losses.

Mr. W. RIDDELL said, as to game, it was quite right, what Mr. Hitchcock had said, that a man had a right to do what he liked with his own, but still he thought if a limited liability clause were introduced into their leases it might have a wholesome effect. If he was in the happy position of being a land-

lord, as he was only, he was sorry to say, to a very limited extent, he should not object to a limited liability clause, but still he would have game and he would have sport, and if the tenant thought he was not going to have either he would not suit him. But he should not object to a clause that if the damage by game exceeded a certain amount the value should be paid to the tenant, and in reference to this he was fully aware of the difficulty there was in valuing damage by game.

Mr. GAYFORD, for one, should be very sorry to see the game laws done away with. They wanted to get the country gentlemen among them, and they could not do that unless they had sport to give them. If they had not some of the right sort of the old aristocracy among them they would be in a pretty fix.

Mr. VINCE said they did not mind the landlords preserving a little if they would only come and live among them.

Mr. MANFIELD, replying upon the discussion, said he thought there must be legislative interference, for in some places game was not preserved as it should be; there was an excess of it, and it did damage. Of course there were parties—both landlord and tenant—who would take advantage where they had the opportunity, but he purposely omitted from his remarks all reference to them. After thanking the club for the kind way in which they had listened to him, Mr. Manfield said if by anything in his paper or in the discussion that had arisen from it a better feeling between landlord and tenant were brought about, or useless restrictions should be done away with, he should be very glad.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL: *Wednesday, April 6.*—Present the Duke of Devonshire, K.G., President, in the chair; Viscount Bridport, Lord Berners, Lord Cheam, Lord Kesteven, Lord Tredagar, the Hon. H. G. Liddell, M.P.; Sir Watkin W. Wynn, Bart., M.P.; Mr. Acland, Mr. Amos, Mr. Baldwin, Mr. Barnett, Mr. Booth, Mr. Bowley, Mr. Cantrell, Colonel Challoner, Mr. Clayden, Mr. Clive, Mr. Davies, Mr. Dent, M.P.; Mr. Brandreth Gibbs, Mr. Hassall, Mr. Holland, Mr. Hornsby, Mr. Hoakyns, M.P.; Mr. Jonas, Colonel Kingscote, M.P.; Mr. Lawes, Mr. Leeds, Mr. Milward, Mr. Ransome, Mr. White Ridley, M.P.; Mr. Shuttleworth, Mr. Thompson, Mr. Torr, Mr. Turner, Mr. Webb, Mr. Wells, M.P.; Mr. Whitehead, Major Wilson, Mr. Jacob Wilson, and Dr. Voelcker.

The following were elected members:—

Althnatt, T. A., Watlington Farm, Tetworth.
Barclay, W. Leatham, Knotts Green, Leyton.
Blyth, James, Weasenham, All Saints, Brandon.
Brough, W. S., Fowchurch, Leek.
Byrd, Frederick, Dunston, Penkridge.
Callender, Peter, Devonshire House, Birkenhead.
Cooke, Frederick F., Caston Hall, Attleboro.
Corbett, C., Broad Marston, Stratford-on-Avon.
Darby, Alfred, Stanley Hall, Bridgnorth.
Davy, John, Owersby, Market Rasen.
Denton, J. Bailey, 23, Whitehall Place, London.
Dickin, Edward F., Yockingsgate, Whitchurch.
Dudding, Henry, Pantton House, Wragby.
Early, Thomas, Witney.
Elwell, Edward, Wednesbury.
Fitzhardinge, Lord, Berkeley Castle, Berkeley.
Gilbert, Joseph, Evesham.
Gillard, Henry, Stafford.
Gunson, John, Hope Field, Lowick, Ulverston.
Hamond, Nicholas, Bridgnorth.
Herring, Henry, Caldwell Farm, Kidderminster.
Hodgson, J. Stewart, Denbigh, Haslemere.
Hamphrey, Henry, Ashington, Hurst.
Hunt, R., Earl's Colne, Halstead.
Johnson, John George, Cross, Torrington.
Johnson, Joseph, Sutton by Beckingham, Newark.
Jukes, Thomas, Tern, Wellington.
Kaye, John Edward, Bretton Park, Wakefield.
Kent, George, North End, Portsea.
King, Frederick, 39, Lombard Street, London.
King, Raymond Fuller, 39, Lombard Street, London.
King, William David, 130, Queen Street, Portsea.
Lepper, George Andrew, Aylesbury.
Lett, William, Rushock, Droitwich.
Mayo, Henry, Cokers Frome, Dorchester.
Mayon, John, Webster, Fazeley, Tamworth.
Morley, Edward, Braze Norton, Bampton.
Newell, Joseph, Lydbury North, Salop.
Park, James, Ulverston.
Page, Thomas Robert, Adderbury East, Oxford.

Parsons, John Philip, 3, Ascacia Villa, Putney, S.W.
Parsons, William, Elsfeld, Oxford.
Pettward, Robert John, Firborough Hall, Stowmarket.
Reade, Joseph, Shipton, Chipping Norton.
Rogers, A., Plas-y-y-pentre, Llangollen.
Roupell, John Stuart, Lee Place, Charlbury.
Rowland, William R., Cresslow, Aylesbury.
Scott, Jonathan, Little Cresswithe, Kewick.
Sheldon, J., jun., Eynsham, Oxford.
Sheldon, Thomas, Oxford.
Short, A. L. H., East Castle-street, Bridgnorth.
Skelton, Edward, Dunkley, Sutton Bridge, Lincolnshire.
Spencer, John, Villiers' Hill, Kenilworth.
Steedman, Edward B., High Ercall Hall, Wellington, Salop.
Stratton, Joseph, Upton Lower Farm, Burford.
Stuart, John Windon, Oldbury-terrace, Bridgnorth.
Stubbs, Richard, Stone, Staffordshire.
Stubbs, Thomas, Teddesley Coppice, Penkridge.
Tallant, Francis, Easebourne Priory, Midhurst.
Taylor, Francis, Church-street, Romsey.
Thompson, Thomas C., Ashdown Park, East Grinstead.
Tildeley, James, Willenhall, Wolverhampton.
Tredwell, William, Elsfeld, Oxford.
Twineh, John, 58, Thames-street, Windsor.
Warner, William Henry, 4, Whitehall, London.
Wiggins, William, Watcombe Manor, Watlington, Oxon.
Wood, John, Draycott-in-the-Clay, Uttoxeter.
Wright, Thomas, Seaton Barn House, Dudley.
Weatherhogg, George William, Newark.

FINANCES.—Major-General Viscount Bridport presented the report, from which it appeared that the secretary's receipts during the past month had been examined, and were found correct. The balance in the hands of the bankers on March 31 was £1,745 3s. 1d., £3,800 remaining on deposit at interest. The balance-sheet for the quarter ending March 31, 1870, and the statement of subscriptions and arrears were laid on the table, the amount of arrears due being £940. The committee had had under their consideration a number of cases of defaulting members, and they recommended that these cases be referred to the Society's solicitor, with instructions to take proceedings to recover the arrears of subscriptions due to the Society.—This report was adopted.

JOURNAL.—Mr. Thompson (chairman) reported that the committee recommended that a prize of £10 be offered for the best description of the most improved form of kiln for burning lime for agricultural purposes*. It was also recommended that the committee be empowered to spend £25 in obtaining an article for the *Journal* "On the Latest Improvements in the Management and Cultivation of Hops;" and that a series of experiments be set on foot during the next autumn and

* Essays competing for this prize must be forwarded to the secretary of the Society not later than June 15.

winter to test the comparative feeding value of Barley and Malt, at a cost not exceeding £100.—This report was adopted.

HOUSE.—Major-General Viscount Bridport (chairman) reported that the attention of the committee had been called to a recent assessment of the Society's house—the previous rating having been on a basis of £80, and the present demand being based on £280. The committee therefore recommended that the secretary be instructed to communicate with the Society's solicitor, with a view to an appeal.—This report was adopted.

LIBRARY.—Major-General Viscount Bridport reported that, with regard to the improvement and the gradual completion of the library, the committee recommended that a grant be made this year of £100 for the purchase of books, and that a future grant of £50 be annually applied for for the same purpose. The committee suggested that a list of books proposed to be purchased be made out by the Editor, and submitted to the Journal Committee for their approval. As to additional book-cases the committee recommended that the two spaces on each side of the fireplace in the council-room be successively appropriated when required, and that the House Committee be empowered to contract for the same.—This report was adopted.

GENERAL, OXFORD.—Lord Kesteven reported the following recommendation of the committee: That the secretary put himself in communication with other parties than those from whom refreshment tenders have been received, in order to negotiate with them.—This report was adopted.

On the motion of Lord Kesteven, it was resolved "That the secretary do put himself in communication with the Oxford local committee to secure the required lodgings for the officers of the Society at Oxford."

CHEMICAL.—Mr. Wells, M.P. (chairman), reported that the committee had had before them the correspondence between Messrs. Bradburn and Co., and Professor Voecker, and that they had nothing to add to their former report.—This report was adopted.

EDUCATION.—Mr. Holland (chairman) reported that only two candidates had entered to compete for the Society's certificates and prizes, and that neither of them desire to be examined either in geology or botany. The committee recommended the following gentlemen as examiners at the forthcoming examination, viz.: General and Agricultural Chemistry, Professor Living and Dr. Voelcker; Land Surveying and Mechanics, Professor Twissden; Book-keeping, Messrs. Quilter, Ball, and Co.; Anatomy and Animal Physiology, Professor Simonds.—This report was adopted.

SELECTION.—Mr. H. S. Thompson (chairman) reported that the committee, after full consideration of the question referred to them by the Council, relating to the power of adjournment possessed by the general meeting of the Society, fixed by the Charter to be held on a particular day in May, have to report their opinion that there is an inherent power in such meeting, when once duly constituted, to adjourn to another day for the more convenient transaction of the business of the meeting, within such limits as shall not admit of a departure from the evident intention of the Charter that a general meeting of the Society shall be held in London for the election of officers and other business at the particular time of year named.

JUDGES SELECTION.—Mr. Milward (chairman) presented a list of the names of gentlemen nominated by the committee as judges of stock and implements at Oxford; and he reported the recommendation of the committee that these gentlemen be invited to act in such capacities at the Oxford meeting. This report was adopted.

VETERINARY.—Mr. Wells, M.P., reported that in order to give effect to the resolution, arrived at by the

Council at their last meeting, the committee recommended that a sum of £25 be placed at the disposal of Professor Simonds for making experiments in pleuro-pneumonia, especially with regard to preventive measures. The committee had received the report of the Governors of the Royal Veterinary College, as well as a communication in reference to the resolution passed at the last meeting of the Council. This report having been adopted, the last-mentioned communication was read as follow:

"Royal Veterinary College, March 23, 1870.

"My Lords and Gentlemen,—The Governors of the Royal Veterinary College having considered the communication from the Council of the Royal Agricultural Society, dated March 3, 1870, beg to express their hope that the amount of the grant of £200 a-year from the Royal Agricultural Society will not be diminished.

"In proof of their earnest desire that the objects of the Royal Agricultural Society shall be attained, they beg to place the £50 a year, which they have for some years appropriated to the purchase of specimens of disease in cattle, sheep, and pigs, in the hands of the Council, and have made arrangements to the extent of their accommodation for the reception of any specimens the Council may forward to the College; and further,

"The Governors of the Royal Veterinary College request the Council of the Royal Agricultural Society to transmit to them such subjects for investigation to be undertaken in the College as they may decide upon, and the Governors will instruct Professor Simonds to conduct such investigation.

"The Governors have instructed Professor Simonds to report the circumstances connected with the diseases manifested in such specimens as may be provided by the Council, and the treatment thereof, to each meeting of their committee for general purposes," which meeting take place quarterly, and from which such reports will be immediately transmitted to the Council.

"The Principal is requested to transmit the communication now agreed upon to the Council of the Royal Agricultural Society.—I have the honour to be, my lords and gentlemen, your obedient servant, "C. N. NEWDEGATE, Chairman.

"To the Council of the Royal Agricultural Society."

It was then moved by Lord Bridport, and seconded by Colonel Challoner, "That the request contained in this communication be complied with." A discussion then ensued, in which Mr. Thompson supported the motion, and Mr. Jacob Wilson explained the views of the committee, and their reason for not acquiescing in the request of the Governors of the College. On the question being put to the vote, Lord Bridport's resolution was lost by 19 noes to 6 ayes.

The report of the governors of the Royal Veterinary College having been read,* it was moved by the Hon. H. G. Liddell, M.P., seconded by Mr. J. D. Dent, M.P., and carried unanimously, "That this Council call the attention of the Privy Council to so much of the report of the Governors of the Royal Veterinary College as relates to rinderpest, and urge the Privy Council to take this report into their immediate and careful consideration."

Memorials having been received from the authorities of Shrewsbury, Stafford, and Wolverhampton, inviting the Society to hold their country meeting for 1871 in those localities, on the motion of Mr. Jacob Wilson, the following were appointed as Inspection Committee to visit and report on the facilities offered by the competing towns: His Grace the Duke of Richmond, Sir Edward Kerriou, Mr. D. R. Davies, Mr. B. T. Brandreth Gibbs, and Mr. William Torr.

On the motion of Mr. Cantrell, the following list of competitors for the prizes offered by Mr. Mason and the Society for the two best-managed farms in the district round Oxford was ordered to be published:

* Extracts from this report are appended.

Cotter, William, Middle Aston, Deddington, Oxford.
 Craddock, Robert, Lynsham, Chipping Norton, Oxon.
 Daahwood, Frederick Loftus, Kirtlington, Oxford.
 Deane, Thomas, Huttons, Hambledon, Henley-on-Thames.
 Denehield, William, Easington Farm, Banbury, Oxon.
 Drace, Samuel, Eynsham, Oxford.
 Edmunds, William John, Southrop House, Lechlade, Gloucestershire.

Fowler, John Kersey, Prebendal Farms, Aylesbury, Bucks.
 Gibbons, George Thomas, White Hill Farm, Tackley, Oxford.
 Gillett, Charles, Cote House, Bampton, Oxon.
 Hall, William, Barford House, Deddington, Banbury, Oxon.
 Hatton, William, Kingston, Tetworth, Oxon.
 Latham, Thomas, Little Wittenham, Abingdon, Berks.
 Millington, Mary Elizabeth, Ash Grove Farm, Ardley, Bicester, Oxon.
 Penson, Robert, Foxcote, Chipping Norton, Oxon.
 Savidge, Matthew, Saraden Lodge Farm, Chipping Norton.
 Smith, Samuel, Somerton, Deddington, Oxon.
 Smith, Thomas, The Downs, Wootton, Woodstock, Oxon.
 Stilgoe, Nathaniel, Manor Farm, Adderbury, Banbury.
 Stilgoe, Zachariah W., Adderbury Grounds, Banbury.
 Treadwell, John, Upper Winchendon, Aylesbury, Bucks.

Mr. Torr then moved "That judges of live stock at the Society's country meetings be supplied with a list of the animals entered for the prizes which they have to award, omitting the names of the exhibitors, but giving the pedigrees of the entries," and he explained that his object was to ensure that the prizetakers should be good animals with good descent, stating his opinion that they ought to possess four or five crosses of pure blood.—Mr. Milward, in seconding the motion, expressed his regret that Mr. Torr had not adhered to his original intention, and proposed that the catalogues should be placed in the hands of the judges, and he quoted the case of a prize bull at the Society's Warwick meeting, which no breeder would have dared to use on account of his want of pedigree.—Mr. J. D. Dent, M.P., having stated that he would have voted for the motion of which Mr. Torr had originally given notice, but that he must oppose it in its present form,—Mr. Bowly expressed his dissent from Mr. Torr's views, mentioning particularly that in his opinion prizes given for animals at a sale rested on a different basis from that on which prizes were awarded at a show. He also remarked that the great success of the Society's shows was due to the certainty of the awards being made with impartiality. Mr. Jacob Wilson also opposed the motion, and expressed his opinion that if the object was to guarantee the possession of hereditary qualities Mr. Torr had placed the cart before the horse, for he should have moved that the possession of a certain pedigree be made a condition of entry.—Mr. Booth likewise opposed the motion, although personally he felt indifferent whether the judges, if they were honest and independent men, were supplied with catalogues or not; but he felt that many younger exhibitors would object to such information as was proposed being afforded to the judges. The resolution having been further opposed by Mr. Turner, Mr. Davies, Mr. Webb, and Mr. Jones, it was withdrawn by Mr. Torr, with the expression of his conviction that the discussion would have a beneficial effect, and that in future years it might be found possible to demand a certificate of pedigree as a condition of entry.

A letter from the president of the "Société des Agriculteurs de France," on the subject of an international agricultural congress was, on the motion of Mr. Brandreth Gibbs, referred to the Journal Committee.

The Secretary was authorised to affix the common seal of the Society to the diplomas of recently elected honorary members.

On the motion of Mr. Jacob Wilson, seconded by Mr. Brandreth Gibbs, Mr. Amos was empowered to commu-

nicate with intending exhibitors of steam-engines, with a view of ascertaining their respective "speeds" and other particulars, so as to facilitate the forthcoming trials of implements at Oxford.

Extracts from the report of the Governors of the Royal Veterinary College to the Council of the Royal Agricultural Society:

"During the past year (1869) events have occurred which tend to prove the increasing importance to the members of the profession of a complete and practical acquaintance with the diseases of farm stock, and especially with those which, normally existing in a mitigated form, are likely to assume an epizootic character, and occasion serious loss to the farmer, although they may not be essentially malignant in their nature. Such, for example, is the malady commonly known as 'mouth-and-foot disease.'

"Some interesting cases of disease of the skin of lambs were brought to the notice of the students. The disease possessed all the characteristics of the affection known as Crusta lactea in the human infant. The parts principally affected by the morbid action were the sides of the neck; and even the shoulders were ultimately attacked. Thick crusts of a dark colour covered the skin, which was also much inflamed and cracked. The young animals suffered much from local irritation and symptomatic fever, under which some sank. The cases, however, were not numerous in the several flocks in which the disease appeared—not more than six or eight among 150 to 200 animals. Application of the oxide-of-zinc ointment proved beneficial; but careful nursing and protection both from hot and wet weather were needed as adjuncts to the treatment.

"Some other novel cases occurred in lambs, in which death resulted from parasites existing on the skin. The parasites in question were those commonly known as ticks (*Ixodes Ricinus*). These parasites abound in most countries, and are met with both on wild and domesticated animals, firmly attached to the skin, from which they draw blood as their food. Until now they have not been found on animals in Great Britain to any extent injurious to health, much less as causing death. In hot countries, however, and particularly in many parts of South America, these parasites attack animals in such vast numbers, that even oxen succumb to the irritating and exhaustive effects of their attacks. Specimens of the skin of lambs, thickly covered with these epizoa, were sent from Kent by a veterinary surgeon consulted on the case. In his communication he writes that 'they had attacked the sheep and lambs, both on uplands and marshes, and that one farmer found a large quantity of them on some colts which were at pasture near to the sheep.' There are few parasites more tenacious of life than ticks, but experiments having shown that they can easily be destroyed by carbonic acid, was recommended that a trial should be given to dipping the sheep and lambs in a diluted mixture of the acid. This proved most effective in the destruction of the ticks, and thereby prevented a further loss of lambs.

"The chief event of the year in connection with cattle diseases has been the remarkable outbreak of the malady known as the mouth-and-foot disease. Few parts of Great Britain have escaped, and in one instance, at least, the disease was ascertained to have been introduced into Ireland by cattle exported from England. In Ireland, however, the malady has been kept far more in check than elsewhere by sanitary regulations, as the executive of the Government in that country was enabled to enforce the orders of Council through the medium of the constabulary.

"Another contagious disease of cattle has excited a good deal of attention—pleuro-pneumonia; and in addition to the legislative provisions for its suppression a revival of the system of inoculation by way of prevention has been resorted to. Experiments for this purpose have been begun in several parts of the country, but chiefly in Norfolk and Cheshire. Some of the results have been published, but in the present state of the inquiry no correct deductions can be arrived at from the data obtained. It may, however, reasonably be doubted whether the results will so far differ from those which were obtained in 1852-53 as to justify the adoption of the system.

"That no fresh introduction of the cattle plague has occurred within the year is a subject of sincere congratulation.

The disease, however, has been more than usually rife in many parts of Eastern Europe, and early in the year made its way from Hungary into Lower Austria, showing itself in several places, and among these in some villages near Vienna.

"The latest intelligence which has been received is far from reassuring.

"The plague had entered Silesia from the south-western districts of Poland, and although it was quickly stamped out, the state of things was so threatening that both the Prussian and Austrian frontiers had to be strictly guarded by the military. It may be thus hoped that Western Europe will be protected from further loss through this most malignant and infectious disease; but that Poland, Galicia, Hungary, Transylvania, and Buckovina will suffer severely from the outbreak cannot be questioned.

"With reference to another foreign disease (the smallpox of sheep) it may be mentioned that the Government measures,

which required that all foreign sheep should undergo a quarantine of fourteen days, or be slaughtered within four days at the port of landing, proved most effective in securing the country against the introduction of the malady.

"Passing from foreign to home diseases of a contagious nature, we find that scab in sheep has been exceedingly prevalent during the year. This disease is essentially parasitic in its nature—the analogue, in fact, of itch in the human subject. It is not difficult of cure, and many of the popular remedies are sufficient for the purpose. These, however, often fail in effecting a cure, as must the best chosen remedies, for want of sufficient care in its application. Each sheep in turn should be well examined, and the agent applied to every spot where the disease is found to exist. In all places where 'scab' are met with they must be well broken up with the fingers before the agent is used, otherwise neither the Acari nor their ova will be destroyed."

THE CENTRAL FARMERS' CLUB.

EXHAUSTION OF SOIL, AND THE VALUATION OF UNEXHAUSTED IMPROVEMENTS.

The usual monthly meeting of the Farmers' Club took place on Monday evening, April 4, in the Club Rooms, Salisbury Square, the chairman, Mr. James Howard, M.P., presiding. The subject fixed for consideration to be introduced by Mr. J. B. Lawes, of Rothamsted, St. Albans, was announced in the following terms: "Exhaustion of Soil in relation to Landlord Covenants, and the Valuation of Unexhausted Improvements."

The CHAIRMAN said: Gentlemen, the subject on the card for this evening's discussion is one of the utmost importance, and I think the Club may consider itself very fortunate in having induced so able a man and a gentleman of such high reputation in the scientific world as Mr. Lawes to introduce it (Hear, hear). Mr. Lawes has laid the farmers of England, and the farmers of the world, under a deep debt of obligation. His researches and experiments are such as have never been undertaken by any other private individual of the present generation; his contributions to agricultural literature will be read by many generations of farmers yet to come. We have heard, and most of us have read, a very great deal of late with regard to the two things mentioned in the card, namely, landlords' covenants and unexhausted improvements in relation to a sister-country. I believe we shall this evening have them lifted above their social and political aspects, and treated from a scientific point of view. Having made these few and brief observations, I will now call upon Mr. Lawes to address you.

Mr. J. B. LAWES then read the following paper:—A comparison of the conditions and practice of the agriculture of this country at the commencement of the present century with those which now prevail, brings to view many important changes. Among the more prominent of these is, not only the great improvement in those descriptions of machinery which were then in use, but the introduction and the very general employment of a large number of entirely new machines, adapted to almost every requirement of the farm. Not less characteristic elements of modern advancement and still continued progress are the improvement of our breeds of stock and the use of oilcakes and other purchased cattle-foods, contributing to early maturity and to a greatly increased production of both meat and animal manures; and lastly, the employment of large quantities of imported, and what are commonly called artificial manures, as distinguished from those which

are produced on the farm by the feeding of stock. Coincident with these changes has been a rise in the value and rent of land; much greater in the case of the light than in that of the heavier descriptions of soil. As a necessary consequence, too, much more capital has been expended in the cultivation of a given area of land. It is remarkable however that, with all these important changes of our own time, little or no alteration has taken place either in the actual course of cropping of any district, or in the views which prevail in regard to the necessity of adhering to a fixed rotation of crops. It would seem as if the systems of cropping established by our forefathers were proof against all alteration, in spite of the vastly improved means of mechanically working the soil, and the enormous increase in our resources of elements of fertility, in the form of cattle-food and manures imported from all quarters of the globe, and of artificial manures manufactured at home. Nor is it less surprising that, with the extensive and greatly increasing use of expensive purchased cattle-foods, the value of which can only be recovered in the meat and manure conjointly, there should be no recognised basis, or general system adopted, for the valuation of unexhausted manures, as between the outgoing tenant on the one hand, and the landlord or the incoming tenant on the other. As a contribution to the discussion of these important points, I propose to direct your attention this evening chiefly to the following questions: 1. Whether, in order to preserve the soil from exhaustion, it is necessary to enforce a fixed rotation of crops? 2. What are the best, or most generally applicable means at our disposal, for the estimation of the value of unexhausted manures? In considering the characters of soil with the view of arriving at some answer to these questions, it will suffice to confine attention mainly to the definition and illustration of those qualities which are commonly known under the term "*condition*," and to pointing out the distinction between these and those which are due to what may be called the *normal* or *natural fertility* of the soil. There are other points of great practical and scientific interest in connection with the state of fertility of our soils which must be left out of view on this occasion; as, for instance, the influence of the various crops we cultivate, the special effects of ordinary and of various artificial manures, the loss of fertilising

matters by drainage, and allied subjects. The word "condition" is in very common use amongst agriculturists. It is said that a farm is "in condition," or "out of condition," or in "high condition" or in "low condition." These terms are well understood to imply certain states of fertility which it is not easy to define more accurately in a few words. As I understand it, the word "condition" refers to those elements of fertility in a soil which, whether they have been accumulated by natural processes or by the art of the farmer, are capable of being turned to account in the growth of crops within a limited period of time, and which by such growth are soon exhausted. "Condition" is, therefore, something altogether distinct from the natural or standard fertility of the soil. A soil may be naturally very fertile, but at the same time very much out of condition; or it may be naturally very poor, but in very high condition. As an illustration of a soil brought into a state of high condition by natural causes, I will quote a few sentences from that great writer on the science and practice of agriculture, M. Boussingault. In his *Rural Economy*, p. 231, he says: "By far the finest crops of Indian corn in America are obtained upon breaks of virgin soil. I do not hesitate to say that the husbandman gains from six hundred to seven hundred times his seed under such circumstances. The mode of proceeding upon these breaks, which I have frequently witnessed, deserves to fix attention for a moment. The planter chooses the end of the rainy season for cutting down the trees and the brushwood; everything remains where it falls until it is sufficiently dry; fire is then set to the heap, and the burning extends and lasts even for weeks; all the smaller branches are completely consumed, nothing but the charred trunks of the larger trees remain. As the rainy season is about to return, a man, with a pointed stick in his hand, goes over the burnt surface, making a hole of no great depth at intervals, into which he throws two or three particles of Indian corn, over which he draws a little earth, or rather ashes, by a slight motion of his foot. This primitive mode of sowing terminated, the planter takes no further heed of the crop; his habitation is often so remote, that he never visits it until harvest time: the rain and the climate do all the work: it is unnecessary to hoe, the burning having destroyed all the plants that were indigenous to the soil, nothing rises but the grain which has been sown. In such fields, stems of Indian corn are frequently seen of the height of from twelve to fourteen feet. It rarely happens that more than three consecutive crops are taken from the burnt soil; and the last, though still very superior to anything which we can obtain by our regular husbandry, is not to compare with the first. As there is no want of forest, it is held preferable to make a fresh break." Here, then, we have an instance of a soil in which the elements of productiveness, having been gradually accumulating for ages, are so far exhausted by three successive crops of Indian corn, as to render it more profitable to abandon the land, and clear a fresh portion of the forest, than to cultivate the same area over again. As a more familiar instance of land brought into "condition" by somewhat similar causes, may be mentioned old pasture, when broken up and converted into arable land. The cases of land brought into "condition," which it is much more to our present purpose to consider are, however, those in which the immediate productiveness is due directly to the outlay of capital by the tenant, by the use of purchased foods and manures, by means of which the land is brought for a longer or shorter, but still only for a limited period, into an increased state of productiveness. By way of special illustration of such "condition" I will direct attention to some results selected from among those of the numerous field experiments made on my farm at Rothamsted. Table 1 shows the produce of dressed corn per acre, on certain plots of a field which has now grown wheat year after year for more than a quarter of a century. Up to the autumn of 1843 it was under the ordinary system of cultivation of the farm. In 1839 it was dunged, and grew turnips; in the next four years it was unmanured; growing barley in 1840, peas in 1841, wheat in 1842, and oats in 1843. In the autumn of 1843 the first experimental wheat crop was sown, and the twenty-seventh is now growing. Portions of the field have received no manure whatever during the whole period of the experiments; one portion has been manured with 14 tons of farm-yard dung every year; and the remainder, divided into numerous plots, has been manured with different descriptions of artificial manure, the same description having, as a rule, been applied to the same plot year after year for the last eighteen years, and in

some cases for longer still. Table 2 shows the results of experiments in which barley has been grown year after year in an adjoining field for many years in succession, the nineteenth crop being now in the ground. The plan of manuring has been very similar to that in the wheat field, portions being always unmanured, part being annually manured with farm-yard dung, and the remainder divided into plots, which have been manured, respectively, with different descriptions of artificial manure. Table 3 relates to experiments on the four-course rotation of turnips, barley, clover or beans, and wheat; and therefore illustrates "condition" of soil under circumstances much more nearly representing the ordinary practices of agriculture than when corn crops are grown year after year on the same land. The twenty-third crop—that is to say, the third crop of the sixth-course—is now growing. The root-crop, commencing each course, has been liberally manured with

ILLUSTRATIONS OF CONDITION.—TABLE 1.
Wheat grown year after year on the same land.

	Plot 2.	Plot 16.	Plot 5.	Plot 17.	Plot 18.
Years.	14 tons dung, every year; 26 years, 1844-69.	Mixed mineral manure, & 800lbs. ammonia salts; 13 years, 1853-64.	Mixed mineral manure, alone; 18 years, 1855-69.	Mixed mineral manure and ammonia-salts, alternated; 18 years, 1852-1869.	
	Bushels of dressed corn per acre.	Bushels of dressed corn per acre.	Bushels of dressed corn per acre.	Bushels of dressed corn per acre.	Bushels of dressed corn per acre.
1844	20½	19½	15½	18½	28½
1845	32	32½	24½	32½	33
1846	27½	27	25	33	26½
1847	29	33	30½	34½	30½
1848	25½	30	30	28	26½
1849	31	33	33	33	32
1850	28½	33	30	30	29½
1851	29	36½	37	31½	31
Average } 8 years, 1844-51	—	30½	29½	30½	28½
1852	27½	28½	*16½	+24½	*14½
1853	19	25	*10	*8	+19
1854	41	49	*24	+44	*23
1855	34	32	*18	+18	+33
1856	36	37	*19	+31	*17
1857	41	49	*23	+26	+40
1858	38	41	*18	+33	*31
1859	36	34	*20	+20	+32
1860	32	32	*15	+25	*15
1861	34	37	*15	+18	+33
1862	38	36	*17	+27	*18
1863	44	55	*19	+21	+46
1864	40	51	*16	+36	*17
1865	37	32	*14	+17	+31
1866	32	17	*13	+26	*13
1867	27	14	*9	+10	+23
1868	41	22	*17	+37	*18
1869	38	16	*15	+16	+23
AVERAGES:					
26 years, 1844-69	33½	—	—	—	—
21 years, 1844-64	—	36½	—	—	—
13 years, 1853-64	—	39½	—	—	—
5 years, 1865-69	—	20½	—	—	—
18 years, 1852-69	—	—	—	+24½	+24½
18 years, 1853-69	—	—	*17½	*17½	+31½

* Mineral manure.

† Ammonia-salts.

‡ Mineral manure and ammonia-salts.

mineral manure, ammonia-salts, and rape-sake; both roots and tops have been carted off the land, and the three following crops of each course grown without any further manuring. Clover was the third crop in the first course; but as it will not grow once in four years, beans have been substituted for it in the succeeding courses. The Table gives the average produce, respectively, of turnips (roots and tops), barley, beans, and wheat, over the second, third, fourth, and fifth courses—that is to say, over the four complete rotations in which beans were grown. Table 4 gives the results of experiments conducted for fourteen years in succession on permanent meadow land, the plan of manuring having been much the same as in the case of the experiments on wheat and barley.

ILLUSTRATIONS OF CONDITION.—TABLE 2.

Barley grown year after year on the same land.

Years.	Plot 7. 14 tons Dung every year: 18 years, 1852-1869.	Plot 2A. Superphos- phate and 200lbs. Ammo- nia-salts every year: 18 years, 1852-1869.	Plot 2AA. Superphosphate and 400lbs. Ammo. Salts, 6 years; 200lbs. Ammo. Salts, 10 years; 275lbs. Nitrate, 2 years; Total, 18 years: 1852-1869.
	Bushels of Dressed Corn per acre.	Bushels of Dressed Corn per acre.	Bushels of Dressed Corn per acre.
1852	33	38½	43½
1853	36½	40½	42½
1854	56½	60½	63½
1855	50½	47½	50½
1856	39½	39½	31½
1857	51½	56½	66½
1858	55	51½	56½
1859	40	34½	35½
1860	41½	43½	43½
1861	54½	55	55½
1862	49½	48½	51
1863	59½	61½	60½
1864	62	58½	56½
1865	52½	48½	47½
1866	53½	50½	50½
1867	45½	44	44½
1868	43½	37½	44
1869	40½	48	43½
	AVERAGES:		
18 years, 1852-69.	46	47½	—
6 years, 1852-57.	—	45½	40½

ILLUSTRATIONS OF CONDITION.—TABLE 3.

Artificially Manured, Four-course Rotation, conducted through 5½ Courses (22 years) 1848-1869.

Average of 2nd, 3rd, 4th, and 5th Courses (16 years) 1852-1867.

Years.	Description of Crop.	Mixed Mineral Manure, Ammonia- salts, and Rapecake, for turnips of each course; 1852, 1856, 1860, 1864. Turnips carted off.
		Per acre.
1852, 1856, 1860, 1864	Swedish turnips*	13 tons 3½ cwts.
1853, 1857, 1861, 1865	Barley	48½ bushels.
1854, 1858, 1862, 1866	Beans.	31½ "
1855, 1859, 1863, 1867	Wheat	36½ "

* Roots and tops.

ILLUSTRATIONS OF CONDITION.—TABLE 4.

Experiments with Manures on permanent Meadow Land.

Years.	Plot 2. 14 Tons Dung, 8 Years, 1856-63; Unmanured, 6 Years, 1864-69. Total, 14 Years, 1856-1869.	Plot 9. Mixed Mineral Manure, and 400 lbs. Ammonia- salts, every year; 14 Years, 1856-1869.
	Hay per acre. Cwts.	Hay per acre. Cwts.
1856	36	56½
1857	47½	57½
1858	37½	64
1859	40½	56½
1860	46½	50½
1861	46½	56½
1862	46½	57½
1863	44½	53½
1864	43	50½
1865	25½	34½
1866	43	44½
1867	51	46
1868	36½	59½
1869	55½	66½
	AVERAGES:	
8 years, 1856-63	44½	—
6 years, 1864-69	43½	—
14 years, 1856-69	43	54

I will first call attention generally to the fact that, throughout the long periods over which these various experiments have extended, "condition" has been equally kept up whether farm-yard dung, or certain chemical mixtures, were employed. In the wheat experiments, the average of 26 successive crops grown by farm-yard dung was 33½ bushels; the average on plot 16, of 21 crops grown by artificial manure was 36½ bushels, and the average on the same plot, over 13 years when the artificial manures were increased in quantity, was 39½ bushels. In the case of the barley, the average over 18 years of farm-yard dung was 43 bushels, and over 18 years of artificial manure 47½ bushels. In the rotation experiment, after the removal, on the average of the four courses, of about 13½ tons of turnips, which had been manured with artificial manure, the average of the four crops of barley was 48½ bushels, and that of the four crops of wheat 36½ bushels. Lastly, in the 14 years experiments on permanent meadow land, the average produce of hay where farm-yard manure was employed, was 43 cwts., and where artificial manures were used 54 cwts. It is obvious, therefore, as I have already said, that land can be kept in "condition," whether continually under grain crops, under rotation, or growing natural grasses, equally by farm-yard dung or artificial manures. I will now endeavour to illustrate the extent, or limit, of duration of "condition" of soil, under different circumstances of manuring. I will refer first to the experiments on wheat, the results of which are given in Table 1. During the first eight years, from 1844 to 1851 inclusive, plot 16 was variously manured with mineral manure and ammonia-salts, and gave an average annual produce of 30½ bushels. During the next 13 years, from 1852 to 1864 inclusive, it received every year a mineral manure, composed of salts of potash, soda, and magnesia, and superphosphate of lime, and also a largely increased amount of ammonia-salts, namely 800lbs. per acre per annum, and the average produce over the 13 years was 39½ bushels. The manuring was then stopped, so that the crops of 1865 and since, have been entirely unmanured. The crop of 1865, the first after the cessation of the manuring, was 39½ bushels, the second 17½, the third 14½, the fourth 22½, and the fifth 16½ bushels. It is obvious, therefore, that the "condition" of the land, due to the unexhausted residue of the manures applied during the 21 previous years, was sufficient to yield a fair crop in the first year after the manuring was stopped, but that the produce then rapidly declined. It should be stated, however, that the quantity of ammonia applied in this experiment was very excessive, amounting, in the 21 years, to as much as would be supplied in 10 tons of Peruvian guano. Deducting the amount of nitrogen in the increase of

crop in the 31 years, from the amount supplied in the manure during the same period, it appeared that nitrogen equal to more than a ton of ammonia, and to more than would be supplied in 6½ tons of Peruvian guano remained unrecovered in the increase of crop. An analysis of the soil to the depth of 27 inches from the surface showed that about one-third of this excess still remained in the soil within that depth, at that period; leaving, however, the remaining two-thirds still unaccounted for. Even the one-third retained within a depth of 27 inches from the surface would appear, from the small produce yielded by it to be so diffused, and locked up in such states of combination in the soil, as to be available in very small quantities annually. Of the remaining two-thirds, doubtless a part is still retained in the soil below a depth of 27 inches; but probably the largest proportion of it has passed off, in the form of nitric acid, in the drainage-water. In the other experiments on wheat, the results of which are given in the Table, the amounts of ammonia applied were by no means so excessive, only half as much being annually applied where they were used at all, as during the 13 years of excessive application on plot 16. During the first eight years of the 36, that is from 1844 to 1851 inclusive, plots 5, 17, and 18, were manured with various but, upon the whole, somewhat similar mixtures of mineral manure, ammonia-salts, and sometimes rapecake, and gave nearly equal average amounts of produce over the eight years, namely—29½, 30½, and 28½ bushels, respectively. From that date, 1853, to the present time, a period of 18 years, plot 5 has been manured with a mixed mineral manure containing salts of potash, soda, magnesia, and superphosphate of lime; and every year during the same period plots 17 and 18 have been manured with the same mineral manure, or ammonia-salts, alternately. For example, in 1853 plot 17 received ammonia-salts, and plot 18 the mineral manure. In 1853 plot 17 received the mineral manure, and plot 18 the ammonia-salts, and so on, alternately for the 18 years; thus, plots 17 and 18 have each been manured nine times with ammonia-salts and nine times with the mineral manure during the 18 years, the difference being that when one received ammonia-salts the other received mineral manure, and *vice versa*; and, accordingly, we have had each year one plot manured with mineral manure following a residue of ammonia-salts, and one plot manured with ammonia-salts following a residue of mineral manure. Over the 18 years the average produce of plots 17 and 18 was exactly the same, namely—34½ bushels in each case; but if we take the average of the 18 crops grown by mineral manure alone, whether upon plot 17 or 18, we find it to be only 17½ bushels, whilst the average of the 18 crops grown on either plot by ammonia-salts is 31½ bushels, or nearly 14 bushels per acre per annum more. At the time of the commencement of this set of experiments the utility of supplying ammonia as manure for grain crops was vehemently disputed, it being asserted that if only a sufficiency of available mineral constituents were provided within the soil, the plant would obtain all the necessary ammonia from the atmosphere. It would hardly be possible to select, or arrange, a set of experiments more entirely conclusive against such a view. The mineral manures, though always succeeding upon a residue of ammonia-salts, gave only a small crop, whilst the ammonia-salts, succeeding upon a residue of mineral manure which had been useless without them, gave a large crop. My present object is not, however, to show the effects of one manure compared with another, but to ascertain how far the unexhausted residue from previous manuring affects the produce of succeeding crops. Plot 5, manured every year with the mineral manure alone, gave an average over the 18 years of 17½ bushels, whilst the same mineral manures applied on either plot 17 or 18, and always after a residue of ammonia-salts, gave only 17½ bushels, or less than ½ bushel per acre per annum of increase due to the unexhausted residue of the previously applied ammonia-salts, these being employed in comparatively moderate quantity. From these results it is clear, that the soil may be kept in "condition" to yield a fair crop of wheat every year, by the application of ammonia-salts and certain mineral manures; but, that, if the ammonia-salts be only applied in moderate quantity, the unexhausted residue will very little affect the produce of succeeding crops. I will now refer to Table 2, which gives some results of experiments on the growth of barley for eighteen years in suc-

cession on the same land. Plot 2A has been manured every year with superphosphate of lime and ammonia-salts; and plot 2AA has received the same amount of superphosphate every year, and twice as much ammonia during the first six years, but only the same amount as plot 2A each year since. Taking the six years of the double application of ammonia on plot 2AA the result is an average of 49½ bushels, against only 45½ on plot 2A, with the smaller amount of ammonia-salts, thus showing an average increase of four bushels per acre per annum due to the extra amount of ammonia-salts applied. In 1853, the first year in which the amount of ammonia applied on plot 2AA was reduced to the same as that on plot 2A, it still gave five bushels more than the latter; in the next year it gave only 1½ bushel more; and in the third year the produce was practically equal on the two plots. Here, again, then, the unexhausted residue from the ammonia-salts previously applied has appreciably increased the succeeding crop; but it should be stated that the amount of ammonia-salts—400lbs. per acre per annum—applied during the previous six years was, for barley, very large, indeed excessive. Table 3 gives the average produce over four consecutive four-course rotations, in which the turnips were liberally manured with mineral manure, ammonia-salts, and rapecake, and the whole crop (roots and tops) carted from the land. On the average, about 13½ tons of turnips were removed; yet it will be seen that the unexhausted residue from the manures applied for the turnip crop was such that an average produce over the four courses of 49½ bushels of barley, 21½ bushels of beans, and 36½ bushels of wheat, was obtained. In the experiments on permanent meadow land, the results of which are given in Table 4, plot 2, was manured with 14 tons of farmyard dung per acre per annum for the first eight years, and has since, that is for six years, been left entirely unmanured. It will be seen that during the eight years of the application of dung the average annual produce of hay was a little under 43 cwt., and that during the six following years it amounted, without any further application of manure, to a little over 43 cwt. of hay, thus showing a very marked effect from the unexhausted residue of the previous heavy dressings of farmyard dung. From the above results, relating to wheat, barley, rotation, and permanent meadow, the following conclusions may be drawn: 1. That condition of land may be maintained, either by farmyard manure or by artificial manures. 2. That when active nitrogenous manures, such as Peruvian guano, ammonia-salts, or nitrate of soda, are applied in only the moderate quantities usually employed in practical agriculture, the unexhausted residue left in the soil after the removal of a corn crop has but little effect on succeeding crops. 3. That when rapecake, bones, and other purchased organic manures, which yield up their fertilizing elements comparatively slowly, are employed, the unexhausted residue left after the removal of the first crop may yield an appreciable amount of increase throughout a rotation. 4. That when farmyard dung is employed the effects may be apparent for a still longer period. 5. That when mineral manures, such as phosphates, salts of potash, &c., are used, the effects of any unexhausted residue are too slow and gradual to admit of any determination of their value. So far I have endeavoured by means of some actual experimental results to illustrate "condition" of soil, and it is obvious that when it results from the expenditure of capital in the purchase of cattle food or direct manures it should be reckoned as the property of the tenant. I now propose to consider those other characters of a soil which are not included under the term "condition." When a tenant takes a farm, what is it he agrees to pay rent for? Partly for the use of a residence and farm buildings; but the greater portion of the rent is paid for permission to grow crops on the land. The course of cropping is either expressly stipulated in the lease or agreement, or the tenant is bound by the "custom of the country." As he is subject to penalties if he deviate from the course so prescribed, it must be assumed either that that course is the very best he could follow for his own interest and profit, or that by following any other, with a view to increased profit to himself, the interest of the owner would be sacrificed by a reduction of the natural or standard fertility or rent-value of the land. Admitting that the recognized rotation of any district may be, upon the whole, the most suitable to follow in it, it nevertheless will not be denied that the farmer of intelligence and capital would, if he were permitted to do so, occasionally deviate from it with profit to himself at any rate.

It will be well, therefore, to direct attention to some results illustrative of the extent and limit of the productive capability of a soil of a certain class or character, with a view of forming some judgment of the probability of injury to the land by a deviation from the ordinary course of cropping. I have, in the course of my various experiments, sought to gauge the capability of my soil to yield crops for many years in succession without manure, and even under more exhausting conditions still, and some of the results obtained are recorded in Table 5. It should be stated, however, that in no case has any attempt been made to increase the productiveness by either subsoiling or deeper ploughing than usual; though great care has been taken to keep the land as free from weeds as possible without injury to the crop by treading.

ILLUSTRATIONS OF NATURAL FERTILITY.—TABLE 5.

Experiments with Wheat, Barley, and Meadow-hay.

Years.	Wheat.		Barley.	Meadow-hay
	Plot 3. Unmanured every year; 26 years, 1844-1869.	Plot 10A. Ammonia- salts, alone; 25 years, 1846-1869.	Plot 10. Unmanured every year; 18 years, 1852-1869.	Plot 3. Unmanured every year; 14 years, 1856-1869.
	Bushels.	Bushels.	Bushels.	Cwts.
1844.....	15	15	—	—
1845.....	23	31	—	—
1846.....	17	27	—	—
1847.....	16	25	—	—
1848.....	14	19	—	—
1849.....	19	32	—	—
1850.....	15	26	—	—
1851.....	16	28	—	—
1852.....	13	21	27	—
1853.....	5	9	25	—
1854.....	21	34	35	—
1855.....	17	19	31	—
1856.....	14	24	13	22
1857.....	19	29	26	25
1858.....	78	92	21	23
1859.....	18	18	13	22
1860.....	12	15	13	24
1861.....	11	12	16	25
1862.....	16	23	16	27
1863.....	17	39	22	20
1864.....	16	32	24	24
1865.....	13	25	18	11
1866.....	12	26	15	23
1867.....	8	18	17	29
1868.....	16	24	10	17
1869.....	14	20	15	18
AVERAGES.				
First period	16	26	23	24
Second "	15	23	17	23
Total	15	24	20	23
AVERAGE STRAW, PER ACRE.—CWTs.				
First period	15	25	13	—
Second "	12	21	10	—
Total	14	24	12	—

The first column of the table shows the produce of wheat obtained for 26 years in succession, from 1844 to 1869 inclusive, on a portion of the experimental wheat-field which has received no manure whatever since 1839. The average produce, per acre per annum, over the 26 years, has been rather over 15½ bushels of dressed corn, about 14 cwt. of straw, and 22½ cwt. of total produce (corn and straw together). The average over the second half of the period is 1½ bushel of corn and 2½ cwt. of straw—less than over the first half; showing perhaps a slight, but at any rate no very marked, tendency to decline in annual yield. I hold in my hand a specimen of this unmanured produce grown in 1863, the 25th crop of wheat in succession, and the 29th crop since the application of any manure to the land. Here also is a section of the soil, taken to the depth of 30 inches; and, so far as can be judged from appearance, certainly no one of experience in such matters would take it to be naturally more fertile than the majority of moderately heavy soils in this country.

Nor does the rent of similar land in the neighbourhood (25s. to 30s. per acre tithe-free), or the condition of the farmers of the district as to wealth, indicate any great fertility of the soil. On plot 10A the productive capabilities of this same soil have been still further put to the test; and the results enable us not only to gauge the past, but to form some idea of its prospective productiveness. For the crop of 1844, the first of the experimental series, this plot received a dressing of super-phosphate of lime and silicate of potash; but not any, either potash, soda, lime, magnesia, phosphoric acid, or silica, has been applied since that date. For the crop of 1845, and for each crop since, that is for 25 years in succession, it has been manured with ammonia-salts alone. During that period it has given an average annual produce of 24½ bushels of dressed corn, and 24 cwt. of straw per acre, per annum, being an average annual increase over the unmanured produce of 8½ bushels of corn, and 9½ cwt. of straw, and a total increase over the 25 years of nearly 220 bushels of corn, and 239½ cwt. (nearly 12 tons) of straw. It is obvious from these results that the soil of this plot 10A has yielded up annually, for this long period, considerably more mineral matter from its own resources than the unmanured plot. There is, however, an average annual produce of 1½ bushel of corn, and 3½ cwt. of straw less over the last 13 than over the previous 12 years of the period. Assuming this to be due to exhaustion, and not to difference of seasons only—and there is the evidence of analysis that it is at least in a great measure due to exhaustion—it is still obvious that it would take many more years yet to bring down the annual yield of this plot to that of the unmanured one. The next column in the Table shows the amounts of produce of barley obtained for 18 years in succession on the same land, without any manure, in an immediately adjoining field. The average produce over the whole period is 20½ bushels of corn, and 12½ cwt. of straw, per acre, per annum. There is, however, a considerable reduction of produce in the later years; the average of the first 9 years being 23 bushels of corn and 13½ cwt. of straw, and of the second 9 years only 17½ bushels of corn and 10½ cwt. of straw, or a reduction of 5½ bushels of corn and 3 cwt. of straw, per acre per annum, over the second half of the period as compared with the first. This more rapid reduction in the case of barley than of wheat is doubtless due to the much more limited range of the roots of barley, so that in its case an actually less bulk of soil has contributed to the crop, and the exhaustion, though telling more upon the crop, is, therefore, more superficial than in the case of wheat. The permanent meadow-land gave, over 14 years, an average of 23½ cwt. of hay per acre per annum without manure, and, as the figures show, an average of only ½ cwt. less over the second than over the first half of the period.

ILLUSTRATIONS OF NATURAL FERTILITY.—TABLE 6.

Unmanured Four-Course Rotation, conducted through 5½ courses (22 years), 1848-1869.

Average of 2nd, 3rd, 4th, and 5th courses (16 years), 1852-1867.

Years.	Description of Crop.	Unmanured, every year; sixteen years, 1852-1867. Turnips carted off.
1852, 1856, 1860, 1864	Swedish turnips*	18½ cwt.
1853, 1857, 1861, 1865	Barley	40½ bushels.
1854, 1858, 1862, 1866	Beans	12½ "
1855, 1859, 1863, 1867	Wheat.....	34½ "

* Roots and tops.

Lastly, as Table 6 shows, the 2nd, 3rd, 4th, and 5th courses of 5 consecutive entirely unmanured 4-course rotations gave scarcely any turnips at all; but the average of the 4 crops of barley was 40½ bushels, of the 4 crops of beans 12½ bushels, and of the 4 crops of wheat 34½ bushels. To sum up the chief points of these illustrations of the extent or limit of the fertility of a somewhat heavy loam, of by no means extraordinary quality, it has yielded an average annual produce, without any manure at all, of 15½ bushels of wheat for 26 years, of 20½ bushels of barley for 18 years, of 23½ cwt. of hay for 14 years, and, under rotation for 20 years, an average

over the last 4 courses, or 16 years, of 40½ bushels of barley, 12½ bushels of beans, and 3½ bushels of wheat. I confess that my view of the productive capability of heavy, or even moderately heavy soils, has undergone considerable change since I commenced the various experiments to which I have referred. Formerly I supposed that a very few years of consecutive corn-growing would suffice to reduce the corn-growing capabilities of any ordinary soil to practically nothing. Such, however, is not the case; and a very little reflection will show how essential it is for the well being, if not, indeed, for the existence of man, that the elements of fertility should be so locked up and distributed throughout the soil, as to be capable of being taken up by crops extremely gradually, and so to last for an immense period of time. If needy landlords, or indigent tenants, could have drawn upon the locked up elements upon which the maintenance of the natural or standard fertility of the soil depends, how little fertile soil would still remain in England? It has sometimes been argued that the soil is to be looked upon as little else than a support for plants, to which the cultivator must add all the constituents necessary for the growth of the crops he removes; just as the manufacturer who hires a mill has to supply the cotton or other material for the manufacture. I think, however, it would be difficult to account for the difference of rent paid for land, except on the assumption that it yields, from its own resources, a greater or less surplus, in the forms of corn and meat, beyond the amounts required to pay the cost of cultivation, to return interest on capital employed, and to afford a profit to the tenant. I think, further, observation will show that, excepting in the case of the lighter soils under modern management, the rent-value of different descriptions of land has generally borne a closer proportion to their relative natural fertility than to any other circumstance. Let us suppose, for example, three descriptions of soil; one that would yield 5, another 15, and another 25 bushels of wheat per acre, from their own unaided resources; that is, without the use of any purchased cattle-food, or manure. A soil which would yield only 5 bushels of wheat would probably bear no rent at all, the whole value of the produce being required to meet the costs of cultivation. The soil yielding 15 bushels would doubtless pay a rent, and the one yielding 25 bushels a considerably higher rent. But now let us assume that all three cultivators were able to go into the market and purchase cattle-food and manure; the three soils would be very differently affected by this importation of elements of fertility from without. An amount of money expended in food and manure that would raise the produce on the poorest soil from 5 bushels to 25, would not raise that on the medium soil from 15 to 35 bushels, and still less would it increase the yield on the best soil from 25 to 45 bushels of wheat. It is obvious, therefore, that the surplus available for rent, dependent on such an use of elements of fertility from without, would be proportionally the greatest on the poorest soil, and the least upon the naturally most productive soil. It is chiefly in the fact here illustrated, that is to be found an explanation of the rapid rise in the rent of light soils of late years; compared with heavy land, they are cultivated at a less cost, they are much better adapted to carry stock, and with the aid of purchased food and manures they can now rival in productiveness the natural fertility of clays and loams. So long as the farmer depended almost exclusively upon the natural fertility of the soil, the surplus to pay rent was much less on those light soils which could supply from their own resources but little of the constituents required for the growth of crops; but since he has been able to go into the market and purchase, in the form of cattle-food and direct manures, those elements of which his soil was deficient, the increase of productiveness which followed has, as a matter of fact, been found to be proportionally much the greater in the case of the lighter and naturally less fertile, than in that of the heavier and more fertile soils. Thus, the productiveness of light soils is in a greater degree dependent on the amount of capital expended on food and manure than is that of the heavier soils. Moreover, the increased fertility, and the increased rent of the lighter soils of late years, are partly due to the accumulations from the past expenditure of the tenant. This increased productiveness is, however, of the character of improved "condition"; and hence it is that the productiveness of such soils may be comparatively easily and rapidly reduced. That, excepting in the case of light soils under the conditions above referred to, the amount

of rent paid is, in practice, chiefly dependent on the natural fertility of the soil, and not on the amount of capital employed by the tenant, is evident from the fact that there are, on many estates, highly cultivated farms with abundance of capital invested, adjoining others in a very opposite condition; the poor farmer being able to set apart from the produce of the land as large a surplus in the form of rent as his higher farming neighbour; whilst any demand for an increase of rent on account of increased capital employed, would be met with the remonstrance that the benefits arising from the increased expenditure of capital by the tenant should justly accrue to himself. From the facts and arguments which have been adduced in regard to the natural fertility of the heavier soils, and to the essential conditions of productiveness of the lighter soils, the question naturally suggests itself—whether, or under what circumstances, the more frequent growth of corn than accords with the recognised rotation of a district might be permitted without risk of deteriorating the property of the landlord? Although any such repetition of corn-crops is strongly objected to, as tending to exhaust the soil, it is remarkable that many operations which affect the soil in an exactly similar way are are not only allowed, but approved. A fallow, for example, is an economical means of obtaining the produce of two seasons in one year; certain costs of cultivation, seed, and harvesting, are saved; but so far as the removal of constituents from the soil is concerned, it is immaterial whether two crops of wheat of 16 bushels, or one of 32 bushels, be taken from the land. By liming, again, certain constituents which are locked up in the soil are set free and rendered available much more rapidly, and so are removed in larger quantity within a limited period of time than they otherwise would be. The same result, namely, the export from the farm of larger crops within a limited period of time, follows in like manner from the use of the subsoil plough, the steam smasher, and a great variety of implements of modern application. In fact, all these processes, which are regarded with favour rather than otherwise, have the one object and result of causing the soil to yield up its elements of fertility more rapidly. I believe that whilst a greater freedom from the adoption of a fixed rotation would often be beneficial to the tenant, it would not, if accompanied with proper conditions, result in any injury to the landlord. In saying this I trust it will not for a moment be supposed that I would recommend the abandonment of a rotation of crops, and the continuous growth of corn. To be more specific, what I do think is, that where fallow, or liming, or subsoiling, or steam smashing, and allied processes, are admissible and advantageous, or where root crops cannot be consumed on the land during wet weather without injury to the succeeding crops—that is to say on the heavier and deeper soils—barley may often be grown both in larger quantity and better in quality after wheat than after a root crop. Again, where mangolds are manured, as they often are, with 20 or even 30 tons of dung per acre, I see no objection, either from a scientific or practical point of view, in taking out of the land the large quantity of mineral constituents still remaining available after the removal of the mangolds, by growing two or even three corn crops in succession, with the application of artificial manure for each extra crop. Very generally, indeed, two corn crops might be taken in succession from medium and heavy land, provided it be kept free from weeds, and artificial manures be applied for the second crop. Nor do I think that real injury would be done by the occasional growth of peas, or even an extra corn crop, on light soils, when the seeds have failed, as occurred after the dry summer of 1868; indeed, as much of some fertilising matters might be washed out of the soil by drainage as would be exported from the land in the extra crop. So far I have endeavoured to illustrate what is "*condition*," and to point out the distinction between it and what may be called the *natural fertility* of a soil. I have maintained that "*condition*" is a quality dependent on the expenditure of the tenant, and that it should be considered as a part of his capital. I have also shown that "*condition*" may be withdrawn, or reduced, by cropping, within a very limited period of time. "*Natural fertility*," on the other hand, is the property of the landlord; and although it is not absolutely inexhaustible, it is very little liable to injury from any system of agriculture which, so far as present appearances enable us to judge, has any prospect of prevailing in this country. It remains to offer some suggestions of a practical kind, with a view to the pro-

tection of the landlord, or succeeding tenant, from injury, in case of any considerable modification, or the entire removal, of the usual restrictions in regard to cropping; and also as to the best, or simplest, method of estimating the value of the unexhausted capital of the outgoing tenant, with a view to compensation from the landlord or the incoming tenant. It will be admitted on all hands, that if the tenant were unconditionally free as to his course of cropping, and he were to leave his farm wholly under corn, the landlord would not so readily obtain a tenant for the farm. I would propose, therefore: 1. That all land should be given up with a fixed proportion under fallow, root-crops, seeds, and corn-crops; the proportions to be settled according to the custom of the locality; and that the outgoing tenant should pay a compensation to be assessed by competent valuers, for any excess of land under corn over the so fixed amount. 2. That, excepting under special arrangement, and with the purchase of stable-dung, or similar town manures, no straw or root crops shall be sold off the farm. 3. That the tenant should be required to keep the land free from weeds; and, in default, to pay compensation to the landlord or incoming tenant for the cost of cleaning; such cost to be assessed by competent persons. The cost of cleaning foul land which is in high condition is much greater than that of putting land which is poor in condition, but free from weeds, into good condition. Moreover, the state of the land as to weeds should be one important element in deciding whether an extra corn crop should or should not be taken. If, therefore, the tenant be allowed greater latitude in regard to cropping, more stringent clauses should be inserted in agreements against foul land. However highly a tenant may farm during the early or middle years of his occupation, he, as a rule, endeavours as far as possible to withdraw his capital out of the land, by reducing its condition towards the end of his term, lest neither the landlord nor the in-coming tenant should adequately compensate him for his unexhausted manures. It must be admitted that there is great difficulty in laying down any rules which shall be generally applicable for the estimation of the productive, and consequently the money, value of the residue of manures which have previously been applied to the soil, and have already yielded a crop. It has been shown by reference to direct results, that some important constituents of manure either leave little or no unexhausted residue in the land, or leave it so combined within the soil, or so distributed throughout it, that it produces little or no appreciable effect on succeeding crops. Some manures, on the other hand, have been shown to produce marked effects for several years after their application. It is obvious, therefore, that it would require a very complicated sliding-scale to enable us to estimate the value of unexhausted manures under the many varying conditions that would arise—as to the description and amount employed, the soil, the season, and the crop grown, were it attempted to take as a basis the valuation of constituents already underground. In Lincolnshire and adjoining counties half-inch bones are valued to the in-coming tenant the second year after application, and in some instances guano is valued after it has grown a crop. It would, I think, be much more satisfactory that all valuation should, if possible, relate only to what is above ground. Nor do I see any difficulty in doing full justice to the out-going tenant without taking into account the value of the unexhausted residue of manures which have already yielded a crop. The three items upon which I would rely as the basis of a valuation in favour of the out-going tenant are—the farm-yard manure made during the last year of the occupancy; the manure from purchased food which has not grown a crop; and the straw of the corn crops of the last harvest. The quantity of straw grown is a pretty sure indication of the condition of the land in regard to recent manuring. To take an extreme case by way of illustration, the continuously unmanured wheat plot which has been already referred to, gave an average of only about 14 cwt. of straw per acre, whilst plot 18 gave, over the 15 years of heavy manuring, 46½ cwt. or 3 1-3rd times as much. Now, if I had entered upon a farm with the straw of the corn crops given over to me not exceeding 14 cwt. per acre, and left it with straw averaging 3 1-3rd times as much, I might surely in justice claim, of the landlord or my successor, compensation for such an increase in the quantity of straw; indicating as it would the increased condition of the land. In reference to this point, it may further be remarked, in passing, that not

more than about 5 per cent. of the weight of the straw is derived from the constituents of the soil itself; by far the greater part being derived from the atmosphere, through the agency of the manures applied, and directly due therefore to the expenditure of the tenant's capital. I propose then, as a part of the compensation to the improving out-going tenant, that he shall be paid the consuming value of the straw which he leaves in excess of that which he entered upon. The next point to consider is, the valuation of the manure which has been obtained by the consumption of purchased cattle-food within 12 months from the termination of the occupation, and which has not yet yielded a crop. Some years ago I published a Table showing the calculated value of the manure resulting from the consumption of 1 ton of each of the chief standard articles of cattle-food. Those estimates were, at the time, considered by some to be somewhat too high. They have lately been carefully reconsidered; and, taking into account the higher money value of some of the chief constituents at the present time, it has been decided to make but little further alteration than to add a few articles to the list that were not previously included in it. The results are given in Table 7.

TABLE 7.

Estimated value of the Manure obtained by the Consumption of different Articles of Food, each supposed to be of good quality of its kind.

Description of Food.	Money value of the Manure from one ton of each Food.
1. Cotton-seed Cake, decorticated	£ s. d. 6 10 0
2. Rape Cake	4 18 6
3. Linseed Cake	4 12 6
4. Cotton-seed Cake, not decorticated	3 18 6
5. Lentils	3 17 0
6. Beans	3 14 0
7. Tares	3 13 6
8. Linseed	3 13 0
9. Peas	3 2 6
10. Indian Meal	1 11 0
11. Locust Beans	1 2 6
12. Malt-dust	4 5 6
13. Bran	2 18 0
14. Coarse Pollard	2 18 0
15. Fine Pollard	2 17 0
16. Oats	1 15 0
17. Wheat	1 13 0
18. Malt	1 11 6
19. Barley	1 10 0
20. Clover Hay	2 5 6
21. Meadow Hay	1 10 6
22. Bean Straw	1 0 6
23. Pea Straw	0 18 6
24. Oat Straw	0 13 6
25. Wheat Straw	0 18 6
26. Barley Straw	0 10 9
27. Potatoes	0 7 0
28. Turnips	0 5 6
29. Mangold-wurtzel	0 5 3
30. Swedish Turnips	0 4 3
31. Common Turnips	0 4 0
32. Carrots	0 4 0

It will be observed how very widely different is the estimated money value of the manure obtained by the consumption of one ton of different articles of cattle-food in common use. It is obvious, therefore, that, in settling the amount of compensation to be paid to the outgoing tenant for the value of the manure produced by the consumption of purchased food, it would not suffice to take a fixed proportion of the purchased-food bill, but the value of the manure-constituents of the particular description of food actually employed must be estimated. It would no more be fair to make the valuation irrespective of the value of the constituents obtained from the different descriptions of food, than it would be to charge the same price for the inferior descriptions of guano as for the best Peruvian. As the value of the constituents obtained as

manure from one ton of the various foods has been estimated at their market price, if sold in a concentrated, dry, and easily-portable state, some reduction from the amounts given in the Table should be made in the valuation supposed, on account of the risk of loss by decomposition and drainage, and for the extra cost of carriage and application to the field, all of which will be greater in the case of the cattle manure than in that of the dry purchased manure. For these reasons I would propose that one-third, or one-fourth, less than the amounts shown in the Table should be allowed for all purchased cattle-food used within twelve months of the termination of the occupation, provided the manure obtained from it has not yet grown a crop. It is, I believe, the custom in Norfolk, and in some other counties, for the tenant going out at Michaelmas to apply the dung made during the previous winter to the root crop, the incoming tenant taking the crop at a valuation. The objections to this plan are, that the root crop is a very uncertain one, and may, in a bad season, be very much less than the amount of manure should produce, and that if the outgoing tenant has fed his stock upon purchased food, the value of the manure cannot be recovered in the root-crop alone, even if the season be favourable. For example, in one of the courses of experimental rotation to which I have referred, after a liberal manuring of rape-cake, salts of ammonia, and mineral manure, less than $\frac{1}{4}$ tons of roots were removed; and the result was, that the succeeding crops amounted, without any further manure, to 60 $\frac{1}{2}$ bushels of barley, 43 $\frac{1}{2}$ bushels of beans, and 46 bushels of wheat. It is obvious that, under the system referred to, these heavy crops of barley, beans, and wheat, would become the property of the incoming tenant, whilst he would only have to pay for the manure which had largely contributed to produce them, the small value of $\frac{1}{4}$ tons of roots. I would submit that it would be a much finer arrangement to value the manure made during the winter by the load, or ton, and that the incoming tenant should also pay two-thirds, or three-fourths, the estimated money value of the manure from the purchased food consumed in its production. If, in addition to this, the outgoing tenant were paid the consuming value of the straw of the corn crops of the last harvest, he would receive fair compensation for the capital which he had invested in "condition," whilst the incoming tenant would only have to pay for that which possessed an actual money value. The conclusions arrived at in the course of the foregoing discussion may be briefly summarised as follows:

1. "Condition" is a quality quite distinct from *natural fertility of soil*: it is mainly dependent on the amount of capital expended by the tenant in the purchase of cattle-food or manures, and is, therefore, his property; it may be easily and rapidly reduced.

2. The *natural fertility* of a soil, whether high or low in degree, is, comparatively speaking, a permanent quality; it can only be injuriously affected by the continuance of an exhaustive system of cropping for a long period of time; it is the property of the landlord; and, excepting in the case of very light soils, it is the chief element in determining the rest-value of the land.

3. In the case at any rate of the heavier soils, it would generally be beneficial to the tenant of capital and intelligence, if he were allowed much more freedom as to cropping than present customs permit.

4. No injury is likely to result to the landlord from granting the tenant permission to crop as he pleases, provided he be bound to keep the land free from weeds, and to leave a fixed proportion under fallow and green crops, at the termination of his occupation.

5. No simple rules, applicable to various descriptions of soil, crop, and manure, can be laid down for the valuation of the unexhausted residue of previously applied manures which have already yielded a crop.

6. By the valuation of so much of the farm-yard manure, and of so much of the manure constituents derived from purchased cattle food, as have not yet yielded a crop, and also of the straw of the last harvest, fair compensation may be made to the out-going tenant, whilst the in-coming tenant will only be required to pay for that which has a fixed and easily-ascertainable money-value.

In 1845 the late Mr. F. Pusey made the following remarks in an article in the *Journal of the Royal Agricultural Society of England* (Vol. V.): "The subject of unexhausted im-

provements seems to me the most important of all agricultural subjects for landlords at present, and the improvement of our agreements in this respect to be a condition *sine qua non* of any steady and general improvement of the soil or its cultivation." If this were true then, how much more is it so now? During the quarter of a century which has elapsed since these lines were written very great advances have been made in British agriculture, and every step in the progress has been accompanied with an increased outlay of money. If abundant capital is to be attracted to the soil, it is essential that liberal covenants in regard to cropping should be adopted, and fair compensation for unexhausted improvements made. If I have this evening in any degree contributed to that advancement of knowledge which is necessary before we can hope to attain marked improvement in these respects, I shall feel that I have not occupied your time in vain.

Mr. J. J. MOCHT said he had listened to Mr. Lawes's remarks with much interest and satisfaction. There were two points to which he wished to allude. First, he would observe that Mr. Lawes's deductions were drawn from a certain quality of land, and that whether it would be safe to rely upon such results in the case of other kinds of land—for example, light sandy soils—was open to question. Again, his own experience differed rather from that of Mr. Lawes as regarded the improvements resulting from an improved application of manures to heavy soils. He had often found that the application of an abundance of manure to the best quality of heavy soils produced quite as great an effect in increasing the crop as was produced on lighter soils, and he might even say that the effect was greater. Without at all desiring to boast, he might declare that on his farm, which, when he went to it five-and-twenty years ago, produced at the utmost in damp seasons from 2 or 2 $\frac{1}{2}$ quarters per acre, had through the application of good manure yielded 8 quarters of white wheat, followed by 7 $\frac{1}{2}$ of rye. In 1867 60 or 70 acres of land under tillage produced on the average 7 quarters per acre. It was clear, therefore, that heavy land was, after being well drained, very grateful for an improved system of cultivation with the aid of rape and corn-fed animals. He quite agreed with Mr. Lawes as to the advantage of keeping land clean, even in reference to adjacent farms. Indeed, he believed that the law would enable a man who sustained injury in consequence of a large quantity of thistle-seed being continually blown from neighbouring land to recover damage, and he thought he remembered cases in which that had been done after an ineffectual complaint. As respected drainage, it was most important that the ditches and outlets should be kept constantly open, and the drains should not be allowed to get stopped up. He attached special value to what Mr. Lawes said about root crops, which his experience showed to be far more difficult to grow than corn crops.

Dr. VOELCKER said he hoped he might be permitted to compliment Mr. Lawes on the very valuable paper which he had just read (Hear, hear). In his opinion that was one of the most valuable papers ever heard in that room, and he was sure that in saying that he would be supported by the opinion of the practical farmers assembled (Cheers). Perhaps he (Dr. Voelcker) looked a little too much at theory, but certainly, so far as the science of Mr. Lawes's paper was concerned, he must say it seemed to him perfectly sound, and quite consistent with all that was known about the application of manuring elements to the soil. He believed that the great majority of those present would endorse, with very few exceptions, the practical deductions with which Mr. Lawes's concluded. These deductions seemed to him extremely valuable; and he regarded them as a most useful attempt to settle the vexed question of the compensation to be paid to the outgoing tenant. That question was a very difficult one, and if he had to settle it he would cut the Gordian knot by giving the tenant a long lease, tying him down to farm during the last rotation of cropping according to a prescribed mode, and leaving him to do almost what he liked in the interval. He had remarked in that room that it was an extremely fortunate circumstance that a tenant could neither impoverish the land permanently nor permanently increase its fertility; and Mr. Lawes had expressed the same—just the same—thought before them that evening in a very practical and telling manner in speaking as he did about the permanent fertility of land. He (Dr. Voelcker) went the whole length with Mr. Lawes in thinking that farmers could not materially alter the permanent

fertility of the soil, and hence the practical advice which he had given for years on that subject was that, as a rule, tenants should be allowed to get whatever they could out of the soil, knowing, as he did, that if they took too much from it they would soon come to a stand-still (Hear, hear). While, on the one hand, he would recommend a landlord not to take a bad tenant, he would also advise him to let a good tenant do with his land as he pleased. Neither light nor heavy land could be profitably farmed except a good deal of money were spent upon it, and after all it came to this: in which way should the tenant spend his capital? Of course the spending of capital was like everything else that practical men had to do with—a matter of discretion. There were cases in which a large outlay must prove unprofitable. No man would send a son who was a confirmed idiot to Oxford or Cambridge University; and, in like manner, if you had a thin soil of three or four inches resting on chalk or marl, as was the case, for example, in some parts of Cambridgeshire, it would be useless to turn up that soil or spend much money upon it. The question was then, how much money could be spent profitably? As a rule, however, it would be found that the amount of produce depended very much upon the amount of capital which was laid out. In the case of light land they had not only to keep the land in condition but they had to supply all the elements of fertility—all the raw materials of growing crops; while in many heavy soils valuable mineral fertilizing matters were naturally present in an almost unlimited extent, speaking practically, and it required only certain constituents, like guano or sulphate of ammonia, to put the land in proper condition. Deep draining, steam cultivation, the thorough breaking up of the land, the ploughing up of stubble, autumn cultivation—these expensive operations generally improved heavy land, and made the clay farmer less dependent upon manures; while on light lands they must spend a large amount on manures if they wanted to grow paying crops. He fully concurred with Mr. Lawes, that a good tenant-farmer ought to be left in a very large measure independent of a rotation of crops (Hear, hear). A rotation would, indeed, naturally follow. A good farmer would find out what rotation suited him best, but he should not be tied down (Hear, hear). Nothing was more injurious to the progress of farming than the being tied down to a certain course of cropping (Hear, hear). He firmly believed, in the long run, the rotation profitable for the tenant would also be most profitable for the landlord. The interest of the two would always go together. He could not quite agree with Mr. Lawes that in compensating for unexhausted improvements no allowance should be made for the effect of artificial manures on succeeding crops (Hear, hear). There were certain artificial manures which told very materially upon the crop following that for which they were applied. For instance, if a turnip crop were well manured with superphosphate of lime, even mineral superphosphate, the result would be seen in the succeeding crop. Some years ago he made some experiments upon turnips with superphosphate of lime, and the result was that he could trace in the succeeding barley crop, as it were by a line, the part of the field where it had been applied. He thought, therefore, they should not go so far as to say that in no case should an allowance be made for the effects of artificial manures on the succeeding crops. That remark was still more applicable to the use of bones. Bone-dust had a more lasting effect upon vegetation than almost any other artificial manure, and he thought, therefore, that where there was no lease the landlord ought to pay a portion of the outlay for boning pasture land. In the case of poor grass lands the result of applying bones might be visible for at least five or six years; and hence the compensation for bone-dust should exceed that for guano.

MR. MECHT: On heavy soils bones never show any result.

DR. VOELCKER: Then you should not use them (laughter).

MR. R. LEEDS (Castle Acre, Brandon) said there was one expression in Mr. Lawes's paper which rather puzzled him when he heard it. From what that gentleman said about the land being "tortured" he inferred that he was not in favour of deep cultivation.

MR. LAWES: O yes, I am indeed.

MR. LEEDS said Mr. Lawes also remarked, he thought, that barley being a shallow-growing crop fell off sooner in the amount of produce than wheat. He could not reconcile those two things.

MR. LAWES observed that barley was a shallow-rooted crop, and exhausted the soil quicker on that account.

MR. LEEDS remarked that that was rather in favour of deep cultivation.

MR. LAWES: No doubt.

MR. LEEDS said he could not agree with Mr. Lawes that straw was a good criterion for a valuation at the end of a tenancy. For many years he cultivated a light land farm. He farmed it highly, and used a great deal of artificial manure and feeding-cake. His thatching bill varied nearly half. One year it was £28 and another only £16, and the same quantity of feeding-stuff was used in both cases. It would not do, therefore, in his opinion, to take straw as a criterion for compensation.

MR. JOHN THOMAS (Bletsoe, Beds) wished to make one or two remarks with reference to cropping. He believed that all tenant-farmers were too much restricted in that respect. The first thing that a landlord, or his agent, should do was to look to the man, and if he had got the right man in the right place—a man of capital and skill—he should not restrict him; for if such a man took too much out of the soil he would soon find out his mistake, and resort to a better system (Hear, hear). The landlord had of course as much right to take care of himself as the tenant; but if the tenant were compensated for unexhausted improvements, instead of being induced to take all he could out of the soil towards the close of his occupation, that would be better at once for the landlord, for the in-coming tenant, and for the community at large (Hear, hear). One great evil connected with the question was that many land-agents knew nothing at all about farming (Hear, hear). They had plenty of theory but no practice (Hear, hear). A man who assumed the character of a land-agent should have previously undergone a certain examination (laughter) as members of the medical profession did; otherwise, they might be dictating to men how to crop their land or manage their farms without knowing anything whatever about the matter (Hear, hear). Professor Voelcker seemed to think that heavy land was much more profitable than light land farming. In his (Mr. Thomas's) experience it had been quite the reverse ("No, no"). Heavy lands, no doubt, often yielded large crops under good management; but there were seasons when they would produce scarcely any crop at all. On light lands they could almost always produce beef and mutton, and adapt themselves to circumstances, so as to meet the peculiarities of seasons and so on; while on heavy lands they might only be able to obtain wheat at 40s. a quarter, and that was an operation which he, for one, was sick of (laughter).

MR. H. TRETHEWY (Silsoe, Amphil) said he cordially united with those who had spoken in such complimentary terms of Mr. Lawes's introduction. He agreed with that gentleman in a great deal of what he said, but there were a few points on which he differed from him. In the first place he did not concur in the opinion that straw would be a good criterion of value, with respect to unexhausted improvements. They had only to go back two or three seasons, when owing to a large amount of wet, the amount of straw was exceedingly small; while in dry seasons the straw crop was generally very good. The same remark applied to hay. Compare the crop of hay last year with that of the year before. In his own case the crop had doubled under the same treatment. Therefore, he thought, such a mode of valuation as that suggested by Mr. Lawes could scarcely be adopted. Another thing in the paper which he could not understand was, the extraordinarily small quantity of 18½ cwt. of Swedish turnips per acre. Supposing there had been some other crop, khol rabi or mangold, the result would, he thought, have been much greater. As regarded the question of leases, he had expressed his views in that room before, as to the comparative advantages of leases and yearly tenancies. He had stated that, so far as his experience went, it tended to show that on estates where leases were not the rule, but, on the contrary, yearly tenancies, the tenancies remained much longer than where an opposite system prevailed, and he could give abundant proof that such was the case. Another result of leases was very high and increasing rents (Hear, hear). Leases had prevailed in Scotland for many years, and it was a notorious fact that rents were higher there than in any part of England. Even in England, where leases prevailed, the expiration of the lease was generally followed by an increased rent. Yearly tenancies went on generation after generation. He did not mean to say that it was prudent to take a farm under a yearly tenancy without some kind of agreement for compensation; but he held, that under

a good landlord, or a good family—[A voice "Or a good agent?"] Well, they must take agents as they found them (laughter)—under a good family, he said, a man was safer as a yearly tenant with a compensation clause in his agreement than he would be under a lease [A voice "How long notice would you have?"] The usual notice was only six months; but he did not know that that much signified, because if there were a two years' notice, there would, of course, be a much more stringent clause as respected the system of cropping. With regard to the question of compensation, he thought that might be settled very easily without any valuation at all. As he in effect said before, an estimate founded on the straw or the hay crop would, in his opinion, be very fallacious. The proper mode of proceeding was, he thought, to have an agreement in the first place as to a scale of compensation, and in his judgment that scale might be easily adjusted. Mr. Lawes said that he would have two-thirds or three-fourths of the value of the manure.

Mr. LAWES observed that by that he meant manure made from any artificial food.

Mr. TRETHEWY said of course something would be allowed for the root crop, which would be obtained through the manure made by the artificial food consumed the year before.

Mr. LAWES: I don't know that.

Mr. TRETHEWY thought there should be. Supposing there were a crop of roots, would not Mr. Lawes allow something for the manure that produced it?

Mr. LAWES replied that he wanted to avoid all underground valuation.

Mr. TRETHEWY said he did not concur in that view. He would go a little further, and allow something for the dung in growing roots. There were two ways of assessing that. In one case the crop was taken at a valuation, in the other the value of the artificial manure which produced the crop. He should go for the value of the manure to be certified or proved by bills showing that such artificial manure had been consumed. He should take half for the manure in the yard, and a quarter for the crop. That was the rule he generally adopted. One little difficulty that had to be dealt with in that case was, that a certain quantity of manure must be applied to all lands in common husbandry. They could not farm without a certain proportion of manure being used on the farm; and the question was how much of that manure, if produced by artificial food, was fairly chargeable to common farming, and how much the tenant was entitled to be paid for when he was leaving. Supposing on a heavy land farm a man grew beans, oats, and other cereal crops, and purchased no cake. That he should be paid for all the manure which he brought to the land in order to produce those crops could hardly have been intended, if such manure was produced on the farm. There must be some kind of line drawn between the natural condition of the land and the natural cultivation required to keep it up to that condition. He thought all that was required might be comprised in an agreement to the effect that should a tenant apply more manure than was necessary to keep the land up to that state of fertility, he should be paid accordingly. Supposing there were a farm including 100 acres of arable land, a certain quantity of manure would be required for its general cultivation, and anything beyond that should be allowed for on quitting. As regarded the comparative merits of light and heavy land, Mr. Thomas, in his preference for the former, seemed to forget that unfortunately seasons affect light as well as heavy land.

Mr. THOMAS said he referred to medium light land, not to land which was extremely light.

Mr. TRETHEWY said as regarded artificial manures, as they all knew bones were more lasting in their effects than guano, the one remaining for five or six years, and the other only for one or two; but he thought a scale might easily be adopted under which such differences might be adjusted.

Mr. NEILD (Worsley, Lancashire) thought that what they had to consider that evening was not so much the different tenures of land as the proper compensation for unexhausted improvements when a tenant was quitting a farm. No agreement would apply under all circumstances and in all cases (Hear, hear). He could not agree with Mr. Lawes in reference to the compensation for what might be called tillages or light manures. In 1868 the farmers in his district used manures on a large scale in the cultivation of turnips. In that year they got little or no crop; but in the following year,

1869, he grew the best crops of wheat, and of clover under that wheat, that it had ever been his lot to obtain on the farm which he occupied. Had he therefore left the farm last year, the tillage of 1868, being underground, would have remained for his successor, and he himself would have derived no benefit from it (Hear, hear). They were now entering upon a new phase of farming; and he believed the sewage of towns would have a great effect upon production. In the neighbourhood of Liverpool and Manchester, an immense quantity of sewage would be brought upon the land, and great results might be expected. As regarded the course of cropping, he agreed with a preceding speaker that the grand thing for a landlord to aim at was to get the right man in the right place, and that would afford much better security for good farming than any parchment enactments (Hear, hear.)

Mr. G. SMYTHIES (Marlow Lodge, Leintwardine) said he was much struck with two features in Mr. Lawes's paper. One was the extreme fairness of that gentleman in recommending the use of ammonical manures in preference to mineral manures, though it was well known that he was a large manufacturer of the latter; and the other was the statement that 40 bushels of barley per acre and 34 of wheat were grown without any manuring on land which was let tithe-free at 27s. per acre. He was sorry to say that he paid 30s. per acre and paid the tithe, and with what appeared to him good manuring he could not produce such an amount of produce. The gist of the paper seemed to be the best way of compensating tenants for their outlay. Mr. Trethewy, while opposing leases, seemed to him to speak indirectly in favour of them. He said that wherever leases were the rule rents increased very much; and every one would agree with him (Mr. Smythies), that where rents increased very much there must be a corresponding increase in the produce of the soil, and that that was an extremely good thing for the community. That was a question which must be viewed in reference to the community at large as well as in reference to individual landlords and tenants; and if, as he believed could be proved, land under leases produced the greatest amount of produce, leases were things to go in for. He knew very well that English tenants generally did not like leases; and the reason for that was, perhaps, that the greater portion of the aristocracy were very kind and favourable to their tenants, and did not wish to turn them out, so that the tenants felt on the one hand that they had sufficient security for their occupation, if they choose to stay, and on the other that they were at liberty to leave. He thought that feeling was at the bottom of the indifference about leases. Still that did not tend to produce the best kind of cultivation, for they might rely upon it, that farmers would not pay a higher rent than in the long run was justified by the return. There was a stimulus in the case of a man who had a lease which led him to get more out of the land than was obtained under any other kind of holding. The question what should be allowed for in the land at the end of a tenancy did not seem to have been much elucidated by that discussion. Mr. Lawes thought the matter should be decided by the straw, but every subsequent speaker appeared to think that that would make compensation depend too much on the seasons. That brought them back to the cost of manure. Now, in his part of the country there was nothing like lime as manure; but in some cases lime was exhausted in two or three years, and in others the effects were seen for five or six years, and how, then, could a fair valuation be arrived at on that basis? He recollected that when he first began to use guano, that is in 1843 or 1844, the results were seen for seven years. As regarded bones applied to land in Cheshire the effect was, he believed, in some cases almost as good now as it was at first (laughter); while on the other hand Mr. Meech assured them that in his neighbourhood bones did no good at all. This matter was an extremely complicated one. He believed, however, that the tenant would be perfectly safe if the landlord would undertake to pay him for the use of a certain amount of oilcake. Still there was nothing like a lease to induce a tenant to farm well.

Mr. TRETHEWY observed in explanation, that Mr. Smythies must have misunderstood him if he supposed that he implied that under yearly tenancies land was not farmed as well as it was under leases. He wished now most distinctly to say that he believed that with proper agreements land was farmed quite as well under a yearly tenancy as under a lease.

Mr. J. BRADSHAW (Knole, Guildford) observed that Mr. Lawes had read a most valuable paper—a paper which fur-

nished a basis for making calculations as to unexhausted improvements. The fact that the experiments had been carried on for 18 or 20 years made them very reliable. It had been well pointed out by several speakers that the duration of the effects of bones and other manures differed according to the nature of the soil, and that variation of course bore closely on the question how much should be received in the way of compensation by an outgoing tenant.

Mr. J. TRASK (Highleaze, Yeovil) thought that Mr. Lawes's conclusions were on the whole very just. As regarded what had been said about straw not being a good criterion of fertility, he would remark that although not a perfect criterion it affords a material element in the calculation. He had known very bulky straw crops grown on soils in good condition, but he had seldom known a poor, or comparatively exhausted, soil to produce a considerable amount of straw, either in a wet or dry season. In such matters the whole aim should be to give such inducements to the outgoing tenant to farm in the last year of his tenancy as well as he had in previous years. If that were done the requirements of what was called tenant-right would be satisfied, while if they went beyond this they might do as much harm as by falling short of it.

Mr. CLEMENT CADLE (Gloucester) wished to add his humble testimony to the value of Mr. Lawes's paper, but there was one point that had escaped notice in the discussion. Mr. Lawes said he was not in favour of any restriction in cropping, except in the last year or two of a tenancy. Now the majority of tenancies in this country being yearly ones, with a six months' notice to quit, under such circumstances there would be great difficulty in restricting a tenant in the last year of his occupation, all the land would be under some crop or other when the notice is served.

Mr. R. J. NEWTON (Cambridge, Woodstock), having succeeded Mr. Howard in the chair, in consequence of that gentleman being compelled to leave, then summed up the discussion. After remarking that he felt himself rather out of place in that position, he said that so far as he could gather from the remarks of Mr. Lawes in his excellent paper, and from the observations of succeeding speakers, it was the general feeling that much greater freedom should be allowed to tenants in manuring and cropping their farms of course without prejudicing the interests of the landlords; and that compensation should always be given to tenants for unexhausted improvements; and he felt sure that if those objects were secured, the effect would be that a great impetus would be given to the improvement of agriculture (cheers).

Mr. LAWES then replied: he observed that Mr. Meehi thought that he had laid too much stress on the experiments which were made in his particular soil. Being fully aware of the difficulty of drawing conclusions from results obtained in any one quality of soil, he had tried to get similar experiments to his own carried out on different kinds of soil—for example,

at Woburn, at Holkham, and in Kent; but he was sorry to say that the matter was attended with great difficulty, and, in fact, owing to weeds or game, or both, the experiments were not altogether satisfactory, and were consequently given up. He did all he could to secure similar experiments to his own elsewhere, but in vain. Another point raised in the discussion, was the valuation of unexhausted manures which had grown a crop. Professor Voelcker had justly observed that bones were an admirable manure, and that the effects were permanent. On some soils the effects of bones were so permanent that they never seemed to do any good at all (laughter). Mr. Meehi thought they were of no use to himself. The truth was a manure might have a special action on a particular crop, on particular soils, and in particular seasons, and no general rule, therefore, could be laid down for the valuation of the unexhausted residue of manures which have yielded a crop. He wanted to have the valuation transferred to what was above ground. The greatest exception taken to his paper had reference to straw. It was naturally remarked that in some years the straw crop was good, and in others bad; but on the other hand, it should be remarked that, whether the crop were good or bad the higher men farmed the more straw they obtained (Hear, hear). The tendency of all high farming was to produce a large quantity of straw. If valuations were transferred in the manner he proposed, a tenant going out at Michaelmas would have two straw crops valued. There would be the straw in the dung, which, he (Mr. Lawes) said, should be valued instead of the turnips, the straw of the last corn crop, and, besides, the value of the manure from the purchased food consumed during the winter. If there were a bad crop of straw one year, there would probably be a good one the next, and with the two there would be a fair basis of valuation. As to the valuation of artificial manures, there was no rule universally applicable. If a man asked him the value of an artificial manure in a particular case he might tell him something near it, but he could not lay down a general principle which would apply to all cases. For example, in one of the experiments he had referred to there was a residue of 600 lbs. of ammonia per acre within 27 inches from the surface, and that did not produce as much effect as 20 lbs. applied afresh on the top of the soil. There was 600 lbs. of ammonia worth 9d. or 10d. per lb., and perhaps it would not produce more than a bushel of corn a year for the next half century. If the valuation were transferred to things that had a tangible money value, that would, in his opinion, secure justice to both parties (cheers).

On the motion of Mr. MEECHI, seconded by Mr. J. THOMAS, a vote of thanks was given to Mr. Lawes for his paper.

On the motion of Mr. H. TRETHEWY, seconded by Mr. LITTLE, thanks were also accorded to the Chairman, and this terminated the proceedings.

WHAT THE CENTRAL CHAMBER OF AGRICULTURE HAS DONE

"They were increasing constantly in numbers, and yet practically they had done nothing. They were endeavouring to perform three most important and difficult tasks—to obtain agricultural Freedom of Trade, to obtain Equal Rating, and to obtain Representation in reference to taxation in the shape of County Financial Boards. Those were the three things which they were established to secure, and they had not advanced one step." So said Mr. Tomline, M.P., when opening the April business in his office of chairman of the Central Chamber of Agriculture. The scope of this Society would here seem to be somewhat arbitrarily limited by its President, and, indeed, the agenda paper went at once to a correction of the honorable gentleman's impression. The first discussion of the day did not turn upon Free Trade, the Equalization of Rates, or the establishment of County Boards; nor, for that matter, did the second. Whatever was said, however, on this or that question, it must

be sufficiently clear that the Central Chamber has "practically done nothing," as that its deliberations are attended with little or no effect. Of this the first topic taken afforded some remarkable illustration. At the meeting in March the Council passed a resolution declaring that "adequate opportunities for instruction may be secured by regular attendance at school up to the age of ten years, supplemented by partial attendance after that age, and that compulsory attendance of children up to the age of twelve years would prove a great hardship to the labouring classes." In accordance with the trimming timidity usually evinced by the Central Council this resolution is as roundabout as it well can be, but if it mean anything it comes to this—that no labourer's child should be compelled to attend any school after he is ten years of age. And, no doubt, a very proper and sensible amendment to the Government Bill would this be. But what has happened in the

interim? At meetings of local Chambers and Farmers' Clubs there has been an almost unanimous expression of feeling, very plainly put, in favour of the ten instead of the twelve years' clause. In Northamptonshire, Lincolnshire, Berkshire, Oxfordshire, Warwickshire, Nottinghamshire, Worcestershire, Hertfordshire, Cornwall, Norfolk and Suffolk resolutions have been carried substituting ten for twelve; while Leicestershire and Staffordshire would appear to have gone altogether against compulsion. The course of the Council on the force of such a manifesto would look to be obvious enough. So far as we can pretend to understand the action of that mysterious carriage-paid body, there is a long sitting on the evening previous to the meeting, when with much care and deliberation "appropriate" resolutions are drawn out for presentation on the next morning. The Education Bill was announced to come again under consideration, and, with the evidence of the agriculturists of the country taken as it were in the mean while, nothing would promise to be better warranted than strengthening or more emphatically pronouncing for the ten years' term, as embodied in the resolution of the March meeting. But the Council in its collective wisdom thought otherwise, and, instead of supporting the original resolution, did everything to weaken its effect, for the first motion submitted on Tuesday ran thus: "That this Council considers that the partial attendance of children between the ages of ten and twelve, as approved by the resolution passed at the last meeting, would be best attained by requiring a certificate of proficiency for every child employed in labour." In the face of all that has since happened throughout the country it is here attempted to fuse or confuse the compulsory attendance from ten to twelve years; although of course as a member, whose name our reporter did not succeed in catching, very properly remarked, "at the last meeting the Council passed a resolution declaring that ten years should be the limit of compulsion, and if a resolution was now adopted to the effect that a child was not to be allowed to go to work after ten unless it obtained a certificate of proficiency, that would be a retrograde movement; it would, in fact, be reversing what was done before." Precisely so; as this brings us back to the chairman's first charge. If the Council will only reverse at the next meeting all they have done at the previous one, "practically, they will do nothing." This marching backwards may be perhaps safe enough in its way; but still it was not altogether countenanced on Tuesday, when an amendment, proposed, as we believe, by one outside member, and seconded by another of the "unpaid," was carried by a majority of more than two to one—the point of this being that "no compulsory attendance should be required after ten years of age."

And here a very pertinent question arises. Is the Council of the Central Chamber—the carriage-paid company which assembles on Monday evening—supposed to represent the sense of the country or the sense of itself? If this be really a central body, of course the first duty should be to collect the opinions of the corresponding societies throughout the country, and frame resolutions in accordance with the majority, as so expressed. Of all the local Chambers which have taken the Education Bill into consideration it would be interesting to hear how many have gone for ten instead of twelve years as the limit for compulsory attendance. And if, as we shall assume, there were a majority in this direction, why was not a clear decisive resolution to that effect put before the meeting on Tuesday? Mr. Mortimer said the other day, down in Devonshire, that "the self-elected members of the Central Chamber had more weight than the Chambers in the country. He did not consider they should place so much

confidence in the Central Chamber, but that they should have a Chamber where they could be properly represented." Every word of this would certainly seem to be warranted by the proceedings over the Education Bill on Tuesday. These "self-elected Members," if Captain Craigie's motion were put with their cognizance, did not properly represent the local Chambers. Their duty would have been to put the ten years' limit as a substantive motion, and to have left Captain Craigie to have done what he could with his proposition as an amendment. Instead of that, they put the cart before the horse, by giving as it were their countenance to this retrograde movement, although ultimately in a meeting of some thirty people the sense of the country prevailed over the sense of the Council.

The Central Chamber of Agriculture was started, not, if we remember aright, precisely to carry out the three objects enumerated by the present chairman, but to look to matters coming before Parliament, and there are now two or three Game Bills launched. Whereupon Lord Aylesford withdraws from his Chamber as he does not approve of this becoming a political association, and Lord Warwick admits that he is very much inclined to do so from exactly the same reason. At the meeting, however, in London on Tuesday it was deliberately declared, "That in the opinion of this Council the application of capital to agriculture is discouraged by—amongst other causes—the over-preservation of ground game." This evil, however, was significantly enough passed without any discussion, possibly from the fact of the over-preservation of ground game having already come under the consideration of the Council. And what has been done by the Central Chamber to remove this discouragement to the application of capital? As Mr. Tomline would say, "practically nothing." In fact, if there had been, it is likely enough that the chairman of the Central Chamber might have followed the example of the noble lord in Warwickshire, and have withdrawn, as not approving of this becoming a political association, that is as regards the over-preservation of game.

Looking at the ludicrous want of administrative ability as displayed by the direction of the Central Chamber of Agriculture, we have not hesitated to express our opinion as to its little use or worth. Or, in the more concise condemnation of its own chairman, "practically they have done nothing, and not advanced one step." A good strong resolution, issued under the authority of a central society, and embodying as it should have done the opinions of agriculturists, might have had its effect on the Government Education Bill. But, should Mr. Foster care to look in this direction, what will he find? A pitiful division of 18 to 8, and the sense of the country frittered away by captains and clergymen. Surely the world is getting very sick of this sort of thing!

PRIZES FOR GARDEN ESSAYS.—Mr. W. Egerton Hubbard's prizes, offered through the medium of the Royal Horticultural Society, have been awarded as follows: For an Essay on Cottage Gardening, the prize of £5, to Mr. E. W. Badger, *Midland Counties Herald*, Birmingham; for an Essay on Window Gardening, the prize of £3, to Mr. H. Buttery, Clapham. For the former prize, thirty-four essays were sent in, of which number those from Mr. W. P. Ayres, Nottingham, and Mr. E. Luckhurst, Egerton House Gardens, Kent, were highly commended; and those from Mr. D. T. Fish, Hardwicke House, Bury St. Edmunds; Mr. A. Meikle, Read Hall, Whalley; Mr. P. Grieve, Calford; and Mr. W. Earley, Digswell, were severally commended. For the Window Gardening Prize, eighteen essays were contributed, that from Mr. D. T. Fish being highly commended, and those from Mr. E. Luckhurst, Egerton House Gardens; Mr. A. Meikle, Read Hall; and Mr. W. Moss, Shelfield, Wickham, Hants, were commended.—*Gardener's Chronicle*.

THE CENTRAL CHAMBER OF AGRICULTURE.

A Council Meeting of this Chamber was held on Tuesday, April 5, at the Salisbury Hotel, Mr. Tomline, M.P., presiding. There were about 30 members present.

The CHAIRMAN, in opening the proceedings, said that they were increasing constantly in numbers, and yet practically they had done nothing. They were endeavouring to perform three most important and difficult tasks—to obtain agricultural freedom of trade, to obtain equal rating, and to obtain representation in reference to taxation in the shape of county financial boards. Those were the three things which they were established to secure, and they had not advanced one step. A short time ago our Minister in China entered, with the consent of the Government, into a treaty, and brought it home with the idea that it could not possibly be opposed. It took away all the transit duties in China, but added 2½ per cent. to the import duties in that country. Lord Clarendon wrote a favourable paper about it, but one or two Chambers of Commerce disliked it, and acted with energy. They went to the Minister, and, in spite of the assent of the Government, and the long and able paper of Lord Clarendon, they gained their point. Such was the result of the efforts of one or two Chambers of Commerce, and that was what he (the Chairman) called decisive action (Hear, hear). Was it not a contrast to what they had done that such rapid success should have followed the action of one or two Chambers of Commerce? He thought they ought to see why it was that similar success had not followed their own efforts (Hear, hear).

Mr. A. PELL, M.P., brought up the following Report of the Local Taxation Committee:—

"The Local Taxation Committee, in presenting their Report, have much pleasure in stating that their executive committee have met regularly twice a week since the last general meeting of the committee on the 7th of March. These meetings have been attended by Sir Massey Lopes, Bart., M.P., chairman, Mr. A. Pell, M.P., Captain Craigie, and Mr. C. F. Gardner, secretary. The circular letters addressed to secretaries of provincial Chambers, requesting further contributions, and asking for lists of magistrates, landowners, and others, have been written and sent out by the secretary, as ordered at the last general meeting. Letters will be sent to the magistrates, landowners, and others, as authorised by the committee, as these lists arrive from the provincial Chambers. Replies have been received from many of the secretaries, and some donations. The committee also beg to report that nearly twelve thousand copies of the 'Prize Essay' have been distributed. The committee cannot close their report without expressing their deep sympathy with their chairman, Sir Massey Lopes, in the severe domestic calamity which he has sustained, and which has caused his unavoidable absence."

In accordance with a recommendation of the Business Committee for co-operation with the International Decimal Association on the question of "Uniformity of Weights and Measures," it was resolved, on the motion of Mr. NEILD, "That a petition to the House of Commons for a Select Committee of Inquiry into the subject be signed by the chairman on behalf of the Council."

On the motion of Mr. C. S. READ, M.P., seconded by Mr. GEORGE ANDREWS, it was further resolved, "That the thanks of the Council be voted to the several Chambers of Agriculture which have increased their subscriptions or forwarded donations to the funds of the Council."

The discussion on the provisions of the Elementary Education Bill, adjourned from the previous meeting, was then resumed.

Captain CRAIGIE said that as he made the motion for adjournment it was his duty to reopen the question. In doing so, he would allude to three distinct points. The first was that the bill was not now in the same position as when they last met. It had been read a second time, and therefore its principles had been approved by the House of Commons. The second point was that there had been promises of important amendments on the part of the Government, and various suggestions had been thrown out as to what should be done in

committee; while the third was that what might be termed the congested state of public business in the Lower House rendered it extremely doubtful whether the bill could pass into law during the present session (Hear, hear). These things should make them very careful as to what they said on the subject, and in his opinion it was desirable that it should be treated by them strictly as an agricultural question, and not as an imperial one (Hear, hear). The vexed question of religion seemed to him inadmissible in that Council, and he hoped that every speaker who followed him would, like himself, abstain from alluding to it. Two exhaustive resolutions were passed at the last meeting, and before proceeding to move an amendment he would reiterate the protest made on that occasion against any contributions being made for elementary education out of local rates until the incidence of those burdens had been altered (cheers). Even that rating question stood in a different position from what it did when the question was adjourned, the likelihood of even the small measure which was then referred to being passed in the present session being very small indeed, and that fact strengthened the protest to which he had just alluded (Hear, hear). There were four points to which he thought the Council might usefully address itself on that occasion—first, what was meant by the "partial attendance" after ten years of age? mentioned in one of the resolutions passed at the last meeting; secondly, the distance to be fixed upon as a limit for attendance at schools; thirdly, the alleged pauperising tendency of free education; and, lastly, the absence of any provision in the bill for technical education, which if judiciously given would, he thought, produce a very good effect in rural parishes. He would move the following resolution: "That this Council considers that the partial attendance of children between the ages of ten and twelve, as approved by the resolution passed at the last meeting, would be best attained by requiring a certificate of proficiency for every child employed in labour." They all knew the difficulty which existed with regard to ages. He did not think it mattered how a child acquired additional education after the age of ten, whether in a night school or in any other way. It would be quite enough if the inspector were satisfied that he had attained the fourth standard, that being made the test of proficiency (Hear, hear).

The Rev. Mr. BOTTFIELD (Shropshire) did not think the Council need trouble itself very much with regard to the period between ten and twelve, as very few boys were then employed in agriculture ("Oh, oh"). He spoke from his own experience in the matter. He had a school of one hundred and twenty boys, and he found that the average age was eleven years and three months. He quite agreed, however, that there were many boys of ten, eleven, or twelve—big lusty lads—who might be usefully employed in agriculture (Hear, hear); and he thought that parliament should be contented if such boys attained as much education as would fit them to perform their duty in after-life (Hear, hear). If a boy had thoroughly mastered reading, he would never forget it. Having once learnt to read a column of a newspaper, he could afterwards study for himself. He thought that amid the attention bestowed on the children of labouring men, the children of a large class of farmers has been too much overlooked. While the labourer might obtain for his children a good education, perhaps for nothing, men immediately above him must either send their children to a pauper-school or not have them educated at all. There were no schools provided for the intermediate class. A school which he originated in his district to meet that difficulty—it was a school for all classes, the children of labourers as well as of farmers and others—had been in existence for 17 years, and complete success had attended it. There were now 130 boys, including the sons of labourers, the sons of farmers, the sons of tradesmen, and even the sons of gentlemen, some of whom he hoped one day to see in the house where their chairman sat. He sent his own sons there, and though he afterwards paid two or three hundred a year for their education, he had not the slightest hesitation in saying that the education which they received in that school was

better than that which they received subsequently. [A voice—What is the highest sum charged?] Fifteen shillings a quarter. As regarded the question of distance, mentioned by Captain CRAIGIE, he found that one boy came six miles to his own school and several farmers' sons came three miles. Payment was not compulsory, but for 11 years there had not been a single instance in which a parent had not wished to pay.

Mr. WILES (Cambridgeshire) observed that most persons seemed now to have entirely lost sight of the importance of industrial education, which in his opinion should begin at ten years of age at the latest. He was not at all inimical to education; but it struck him that the country was running wild about it ("No, no"). If the compulsory principle was to be carried out, it must be applied to the children of peers as well as to those of peasants (Hear, hear). Noblemen must in that case have their children educated as well as vaccinated (laughter). Some rich parents spoiled their children; and he supposed they would be called to account (laughter).

Mr. SMITH (Essex) asked the Chairman whether the religious question was to be admitted into the discussion?

The CHAIRMAN replied that it was to be excluded, and the meeting was to confine itself as much as possible to the point before it.

Mr. GARFIT (Lincolnshire) observed that the great problem was, how the children of agricultural labourers were to be compelled to attend school, as the Government proposed, and yet the family be fed and clothed? He believed that many persons went with the stream in advocating compulsory education, without individually approving of it (Hear, hear); and, in his opinion, it could not be enforced without interfering injuriously with the right of parents to secure a maintenance for their children. Many children could not be fed and clothed properly even now; and what would be the use of driving a half-fed and half-clothed child to school? (Hear, hear.) If there must be compulsion, let it, at all events, not extend beyond the age of ten, when boys became very useful to their parents or their employers. He concluded by moving as an amendment, "That this Council considers that no compulsory attendance should be required after ten years of age, and that, after a certificate of proficiency in reading and elementary writing at any age, no compulsory attendance should be required."

The Rev. E. H. WILLES (Leicestershire), in seconding Capt. Craigie's resolution, said he believed there would be no necessity for compulsory education in rural districts where good schools were provided. Nor did he think that rating would be required under a good system of school management. In his own parish—a parish comprising a population of 300 souls—the children's pence and the Government grant together paid all expenses, and left a surplus.

Mr. WEBB (Worcestershire) advocated exemption from compulsory attendance, in the hop districts, during the picking season, when the mothers were in the field and the home shut up.

Mr. VARDEN (Worcestershire) concurred in this view.

Mr. WHITWELL (Peterborough) supported Capt. Craigie's resolution, on the ground that, after ten years of age, a certificate of proficiency ought to satisfy everybody. He deprecated any attempts to stop the progress of education. At the present moment many agricultural labourers could not read the names on carts. ("Oh, oh!") A week ago he asked a labourer to read a name, and he could not do so (A Voice: "That is the exception"). He believed that it was not the exception. In such remote districts as the Government Bill was especially intended for, there would in many cases be no schooling without compulsory education and local boards. In a school of 300 children with which he was connected the master told him that the greatest difficulty he had to contend against was the voluntary principle, adding that, if attendance were made compulsory, the table would be better filled up, and the children all the better for it. The man he mentioned was only 40, and a very good labourer too (Hear, hear).

Mr. LEMAN said that in his county great attention was paid to the education of the labouring classes.

Mr. HERMAN BIDDILL seconded Mr. Garfit's amendment, which seemed to him much more to the point than Captain Craigie's motion. He wished that gentlemen who advocated compulsory education up to 12 years of age would consider what it would lead to. How was a child to be forced to attend school? What did compulsion mean? It meant fine

in case of non-compliance, and where there was no money fine meant the gaol (Hear, hear). He admitted, however, that Mr. Forster's bill only required a little alteration to make it suitable to the wants of the country. As a large employer of juvenile labour in agriculture he would warn farmers against waiting until the bill was passed before seeking to get its provisions altered; whatever was to be suggested in the way of alteration must be urged now. His idea was that there were many parents who could not spare a child for school beyond ten years of age, and he was for limiting the restriction to that age. He had six boys in his employment under 13, and some of them had been at work for four or five years, and he felt certain that some of the parents could not have spared their child's labour even in the first year that he (Mr. Biddell) employed him.

A member observed that at the last meeting the council passed a resolution declaring that ten years should be the limit of compulsion, and if a resolution was now adopted to the effect that a child was not to be allowed to go to work after ten unless it obtained a certificate of proficiency, that would be a retrograde movement; it would, in fact, be reversing what was done before (No, no). At the preceding meeting it was declared that no attendance at school should be required after ten.

Captain CRAIGIE explained that the resolution on the subject passed at the last meeting was, in effect, that regular attendance should be required up to the age of ten, and partial attendance afterwards.

Mr. GENGÉ ANDREWS said he concurred neither in the original motion nor in the amendment. He believed that the longer they discussed the question in the way they were discussing it, the farther they would be from any conclusion. The longer he listened, the more he felt that they were in a mist (Hear, hear). The main point on which the Council were agreed was decided opposition to the rating principle, and he believed there was a general feeling against labourers being compelled by law to send their children to school (Hear, hear). One fact of general application was more expressive than a long string of arguments. Some time ago he met with a case in which a labourer's daughter, who was one of a large family, earned 2s. a-week by making gloves, thus supplementing, to that extent, the father's wages of 10s. a-week. The Government Bill as it stood would prevent that.

Mr. SMITH (Essex) felt, that to compel children to attend school after they became ten years of age would be to lay a very heavy burden on many parents. A great number of children could, at that age, earn 2s. or 2s. 6d. a week, which materially helped the parents in providing for the wants of the family. The proposal to authorise the levying of a 3d. rate for education greatly strengthened the arguments of the Local Taxation Committee.

Mr. CURZON was sorry to be obliged to endorse the opinion expressed that day that many labourers could not read the letters on carts. A short time ago he met with a case in which a girl who was a witness at a Coroner's inquest, and who had left school only two years before, was obliged to put a cross against her name (Hear, hear, and a Voice: "That shows that the schooling was not very good"). There must, he thought, be partial compulsion or attendance at night schools after the child became ten years of age.

Mr. NEILD (Cheshire) hoped the meeting would confine itself strictly to the agricultural aspect of the question (Hear, hear). The Council had been censured for what it did at the last meeting, and he believed many who took part in the proceedings would not now vote for any compulsion at all (Hear, hear). He had in his employment children under 13 years of age who were earning as much as 4s. 6d. a week, and he felt certain that unless lads were initiated in agricultural work early, they would never learn in after life. By providing a little for industrial education, and not forgetting the primary point of feeding and clothing, parliament would do a great deal more good than by sticking altogether to scholastic education (Hear, hear). Many persons in his parish said that people were now riding the education horse to death (Hear, hear). Notwithstanding all that had been said about the ignorance of agricultural labourers, he believed that the school attendance in most of the rural parishes would shame the towns in a comparison (Hear, hear).

Mr. GARFIT, as the mover of the amendment, then replied. He said that if he had been previously aware of the feeling

of the meeting as manifested in the discussion his amendment would have gone a little further in the direction of opposition to compulsory attendance at school (Hear, hear). He was in favour of compulsion in so far as it would oblige parishes to provide adequate school accommodation, but opposed to it in so far as it would compel children to go to school (cheers). If they provided pure water for cattle the cattle would drink it, and the same principle applied, he believed, to the case of schools. Compulsion would, when carried out, produce a revulsion against itself. Even Mr. Forster seemed hardly to have made up his mind on the point, but the Birmingham party was urging him on in that direction, and hence it was important that agriculturists should urge him in the contrary one.

The Rev. E. H. WILLES reminded the meeting that compulsion was already carried out in towns under the Factory Act.

Captain CRAIGIE appealed to the meeting whether it would be wise to revoke, as he thought it would do by adopting Mr. Garfit's amendment, the decision which it came to at the last meeting, after long and grave deliberation. The resolution passed on that occasion was so worded as to avoid declaring that there should be no compulsion, but it distinctly affirmed that there should be none after ten years of age. He thought it would be wise for the Council to leave the question there, and not pass an amendment by which, in his opinion, they would stultify themselves in the eyes of the country. He was perfectly prepared, if the seconder would assent to it, to insert in his resolution the qualifying words, "in country districts."

Mr. MUNTZ expressed his approval of the limitation of compulsion to the age of ten.

The amendment was then submitted to a show of hands, and carried, the numbers being eighteen for and eight against it; majority, ten.

The CHAIRMAN said that the next question for consideration was the causes now in operation which discourage the application of capital to agriculture; and a discussion followed as to the propriety of postponing the matter until the next meeting in May, a course which was strongly advocated by Mr. Jasper More, and opposed by Mr. Genge Andrews, Capt. Craigie, and Mr. H. Nield. The last mentioned expressed his surprise that such a proposal should have been made after the long preliminary discussion which took place in the Executive Committee the previous night in settling the resolution to be submitted to the Council. The Committee were engaged until past eleven o'clock, and had considered the resolution clause by clause, to the best of their ability; and if the council were to waive the present opportunity of pronouncing its opinion on such an important subject, all he could say was that the Central Chamber of Agriculture was not likely to pass muster with the practical farmers of England. It was then agreed, on a show of hands, that the discussion be at once proceeded with, and

The CHAIRMAN read the resolution prepared by the Business Committee as follows: "That in the opinion of this Council the application of capital to agriculture is discouraged by the following causes—1. The undue amount of local taxation upon capital invested in land and its improvement. 2. Uncertainty of tenure. 3. Absence of compensation for unexhausted improvements. 4. Unnecessary restrictions upon courses of cropping. 5. The over-preservation of ground game."

It was then arranged that the several "causes" indicated should be taken and considered separately; and

Mr. WHITAKER thereupon moved, "That the application of capital to agriculture is discouraged—first, by the undue amount of local taxation upon capital invested in land and its improvement." He observed that matters of such magnitude as were embraced in the resolution which had come down from the committee required the careful attention of all the local chambers, and that the sooner the subject was gone into with spirit and determination the more likely would they be to arrive at a just conclusion, and to meet the wishes of both the landlords and the tenantry of the country. The resolution involved some very vexed questions, but they must not recoil from their consideration simply because of a diversity of opinion. Especially when they saw the progress that was being made—he might say in a revolutionary direction—with the land question (Hear, hear), it was the duty alike of landlord and of tenant, and the possessors of real property generally, to stand forward and avow their opinions with equal

moderation and firmness. There were portions of the resolution to which he was not favourable; but the first clause of it set forth a truth which no reasonable man would attempt to deny (Hear, hear). The purchaser of an estate worth £1 an acre, invested in it say capital to the amount of £5,000, and increased its value from £1 an acre to £2 or even 50s., by drainage, new buildings, and other improvements, when in would step the rating committee, and tax the capital so invested to the amount of 12 per cent.; whilst, if the money had been invested in the funds, it would be charged only with the income-tax of 4d. or 5d. in the £1. In these circumstances, he asked, whether it was likely that either landlords or tenants would invest their capital largely in the improvement of the land so long as such an iniquitous system of local taxation continued. Upon this first clause of the resolution, then, he trusted that every chamber of agriculture and farmers club in the kingdom would be unanimous, and that the Local Taxation Committee would have their hands strengthened by the resolutions which those several associations might arrive at on the subject. Having made this reference to the Local Taxation Committee, he would take the opportunity of remarking that that committee ought to receive a much larger support than they had yet done from the chambers of agriculture, and that unless funds were supplied to them to work the Central Chamber more efficiently, this grand movement in the interest of the farmer would fail (Hear, hear). He said this because he found that the subscriptions on the part alike of societies and of individuals were of such a meagre character that they would not enable the Chamber to carry out the important objects that it had in view. If they turned for a moment to the operations of the manufacturing community, they would see the large manufacturers coming forward and giving their personal exertions and money subscriptions to promote their common interest; and that the agricultural community should remain quiet and utterly apathetic when this important question of local taxation was being agitated, was to him a source of great amazement (Hear, hear).

Mr. GENGÉ ANDREWS seconded the motion, because it was almost the only question upon which this Council and the local Chambers might be said to agree. It was a question, indeed, as to which there was scarcely a discordant opinion entertained (expressions of dissent). He did not mean to say that that was absolutely and positively the case, but that there was such a great majority of the members of this and the local Chambers in favour of it that they might safely assert it to be the leading question which the vast preponderance of opinion was ready to support. That, he thought, would be generally admitted. What was the question in itself? It was not that of creating a new tax; but they were attacking the system of exemption from a tax. They contended that capital invested in land and in the cultivation of land was more heavily burdened by taxation than capital invested in any other property or pursuit. It was not wise or politic to lay an extensive tax on the production of food, so far as agriculture was concerned, for the tax had to be paid before any profit could arise to either the owner or the occupier of the land. More particularly was it an injustice to the owner. For if he were the possessor of land which scarcely afforded any rent, there was a tax of 12 per cent. upon the net annual income of that land, and that must operate as a bar to its cultivation on the slightest depreciation in its value. The land must therefore go out of cultivation if it did not pay rent. On the other hand, it was quite clear that if these local taxes were distributed over the income arising from the whole of the capital of the country, however invested, the land instead of 12 per cent., would probably have to pay little more than 4 per cent., in other words, the burden it bears would be reduced by two-thirds if it were fairly distributed over all the capital returning a profit in the country. The result would be a large extension of the area which could be brought into cultivation; and therefore an increase of employment for capital and consequently of labour. Even upon economic considerations then, he held that they had fair ground for saying that these local taxes were imposts levied upon the raw material of food, were unjust and impolitic, and injurious to the common weal, leaving out of the question the interest of the landlord and farmer. As to the farmer, he was not directly interested in this taxation, which really fell upon the owner; but collaterally another element came in which brought the occupier very strongly into the field. They all knew that the farmer could not

change his stock with the same facility that a trader could change his. Once that the farmer had invested his capital, it was in itself a serious tax upon him to have to remove it (Hear, hear). Consequently occupations did not frequently change hands, nor were rents often adjusted. It was not natural indeed that they should; because, in the first place, the profits of farming were exceedingly precarious. There might sometimes be a run of two or three years with scarcely any; and, again, for two or three years there might be a profit; so that if changes were frequent they would be fatal to good cultivation in every respect (Hear, hear). Take the case of a man who has been an occupier of land since the year 1832, in a district where rents were not doubtful from day to day. He found by the returns of the Poor-law Board that six or seven millions sterling had been expended in that period upon the purchase of sites, legal expenses consequent thereon, and the erection of union houses alone. There had also been a greatly-increased expenditure on the building of gaols, lunatic asylums, militia stores, and county courts. In his county (Somerset), for example, the outlay on an assize hall amounted to £100,000. Now he should like to know upon whom all that expenditure had fallen (Hear, hear). The man who had been an occupier since 1832 had not only had to pay for these buildings, but the interest upon the money they cost, which in 25 years had been as much as the capital itself. Besides that he had had to bear large additional charges which had been placed upon the poor-rate. If at any time he wanted redress on account of these things, all he could do was to go to his landlord and ask for it; but the fact was that these increased burdens had come upon him gradually, and in practice it was very rare indeed that the man was able to get an abatement of rent on the ground of those additional charges on the poor-rate which he had not contemplated when he entered upon his occupation (Hear, hear). Collaterally and indirectly, then, the occupier was deeply interested in the present system, though it was true that, in the abstract, the taxation fell solely upon the owner (Hear, hear). At the present moment a Committee of the House of Commons was engaged in inquiring into the advisability of dividing the burden between the owner and the occupier; than which he believed a more insidious proposal was never made (Hear, hear). One of the principal promoters of the Committee, not the Chairman himself, but a gentleman who sat on the right hand of the Chairman, told him a year ago that he was quite ready to relieve the tenant from some of his future responsibility; and when he (Mr. Andrews) was examined before the Committee, a few days since, he stated that the proposal was ridiculous; for he contended that if they did anything in that direction the whole charge should be borne by the owner. Had it been laid upon the owner from the year 1832, was it likely that the additional charges would have been imposed on the poor-rate as had since been the case? He thought not; and if they were placed on the owners now, he believed the eyes of those gentlemen would sooner or later be so opened that the chambers of agriculture would have that interest with them much more heartily than at present. What he said, however, was that the system of exemption ought to be abolished. There was some difference of opinion in many minds as to the mode in which that should be done; but if the exemptions ceased, and the charge were placed on the basis of the income-tax the trading, manufacturing, commercial and farming interests would still have to pay the income-tax as they now did upon their profits. One thing quite clear to him was that if a man had £10,000 invested in mortgage it was as much realized property as if it were invested in land or houses, so that the argument that profits ought not to be assessed would not exclude the doctrine that capital ought to be assessed. Take a large brewer or manufacturer who had a considerable capital invested in his business, was that capital to escape altogether? was it not as good as if it were embarked in land? It was even admitted by a great many persons who did not support the farmers or their associations that the exemption of realised capital, however invested or employed, was an injustice; and he agreed with the late Sir G. Cornwall Lewis, that the profits of capital when realised, were as assessable to the relief of the poor and the twenty-five other objects to which poor-rate was applied as any other capital. For the information of his brother agriculturists, he would enumerate the various heads under which the money levied as poor-rate was expended. They were these: For the

relief of the poor, £6,959,000; payments towards county, borough, and police rate, £2,511,000. Then came constables' expenses and costs of proceedings before justices; registration fees on account of the Registration Act; vaccination fees; parliamentary and municipal registration; highway board expenditure; proceedings at law and equity; surveys and valuations; other expenses not discriminated. Next, there were the heads of county rate expenditure; rural police and superintending constables; conveyance of prisoners; gaols; prosecution of prisoners; shire halls; lunatic asylums; maintenance of pauper lunatics; county bridges; clerks of the peace; coroners; inspectors of weights and measures; interest on principal of debts; repayment of debt; militia storehouses, and miscellaneous. Nobody could say that these various heads were for strictly local purposes, and the fact was that local and general purposes were mixed up together (Hear, hear).

Professor BURN moved to amend the clause by striking out the words "capital invested in land and its improvement," and substituting for them the words "capital invested in the improvement of land." What they wanted to show was the reasons that people would not come forward and invest their money in the land. These were two: first, that they were taxed on their improvements, to which they naturally objected; and next, there was the uncertainty as to what the amount of taxation would be. When a man took the lease of a farm, he calculated that his rent would be so much, his tithes so much, and his taxes so much, and thus he arrived at his probable profit. But these local taxes were continually increasing, and never taken off; consequently he could not fairly calculate what would be the amount, though he might be aware that he would have to pay far more at the end of ten years than he would at present. And this uncertainty about knowing what his outgoings and incomings were likely to be, acted as a great discouragement in the application of capital to the improvement of the land.

The CHAIRMAN: Your point is that year by year the rates become larger without the tenant knowing what they would be. The amendment seems to be a logical one; and although the Business Committee have placed on the agenda paper the resolution as it stands here, I will take the sense of the Council upon it.

Mr. NEILD thought there could be no objection to the amendment, which after all appeared to be simply a verbal alteration.

Mr. VARDEN, in seconding the amendment, observed that what was termed "rent" consisted of two parts: payment for the use of the natural powers of the soil, and payment for the use of the capital invested in the soil. For the purposes of the present discussion, they had nothing to do with the first. The simple question they had to consider was, What prevented capital from being attached to the land in the form of improvements? It was not the question, What taxation fell upon the land? but What fell upon the improvement of the land? If they followed out the view of the late Sir Robert Peel, they would at once perceive the cogency of this. That view was that everything which bore upon the means of production should be swept away, and a substitute placed by taxation upon profits; because a tax upon the means of production was a bar to improvement. In the light of that principle, therefore, the Chamber was asking for relief; for a tax upon the improvement of the land acted just as much upon agriculture as a tax upon the raw material formerly did on the imported article. What they wanted, then, was that the capital attached to the land should be in precisely the same position as capital employed in any other manner (Hear, hear).

After some remarks from Mr. WILES, and Mr. BRAMLEY, the amendment was put and negatived, and the original motion agreed to.

Mr. RUSSELL next moved that the application of capital to agriculture was discouraged by uncertainty of tenure, and the absence of compensation for unexhausted improvement. These questions he regarded as essentially interesting to the tenant farmer. As to uncertainty of tenure, it was well known that thousands of landowners objected to grant leases; and he for his part readily admitted that there would be no necessity for leases if a fair system of compensation for unexhausted improvements were established. Those who contended, however, for leases for the protection of the tenant were perfectly right in doing so under present circumstances; but it was

not necessary that the existing system should be always in operation; and as there was now a land bill before the House of Commons for the protection of the occupier in Ireland, he saw no reason why the English tenant also should not be equally protected (cheers). Of course the relations between landlord and tenant were different in the two countries; but in a modified degree, and so far as improvements were concerned, some legislation in the same direction was as much required in England as in Ireland. What advantage was there in a lease beyond the security it gave a man that he would not be disturbed in his holding for a certain length of time? True he would put his capital into the soil during the earlier portion of the term, but he would make a point of taking it out again before the lease had expired (Hear, hear). Now if he were entitled to compensation for unexhausted improvements, there would be no necessity for his doing anything of that kind; and he might continue to farm just as well at the close as at the commencement of his tenancy (Hear, hear). In his opinion, then, it would be for the mutual interest of landlords and tenants that compensation should be given for unexhausted improvements, and that that compensation should be secured by Act of Parliament (cheers).

The motion having been duly seconded,

Capt. CRAIGIE thought it desirable that the wording of a resolution of such grave import should be carefully weighed, and he felt that the could not endorse the first three words of the combined clauses, viz. "Uncertainty of tenure," because their meaning had not been satisfactorily explained. There were few parts of the country better off in respect of compensation for unexhausted improvements than Lincolnshire, where a perfect system prevailed. He held in his hand an agreement between a landlord and tenant in that county, and under its provisions a number of things were specified with regard to which the tenant could recover all the capital he had invested at the end of his occupancy, though he might quit upon a six months' notice only. What was really required was compensation for such things as draining, manures, and especially feeding stuffs. He begged to move, as an amendment, therefore, that "Uncertainty of tenure" be omitted, and for the words "absence of compensation for unexhausted improvements," that "absence of leases or a well-regulated system of compensation for unexhausted improvements" be substituted. These amendments would, he thought, meet the case, as respected sufficient security of tenure, without the use of words which, in their present connection, were to many persons decidedly objectionable, and he hoped that by voting for them the Chamber would pronounce an emphatic condemnation of the doctrine which found some favour in these days that there was such a thing as an acquired property termed "occupation" beyond what a man had expended in improvements.

Mr. GENCE ANDREWS, in seconding the amendment, said that, in practice, compensation for unexhausted improvements was a question between the outgoing and the incoming tenant, and was not a question in which the landlord was particularly concerned (dissent). That, he considered, was a point which all should understand; and if any system of compensation for unexhausted improvements could be agreed upon by tenants, landlords would be only too happy to sanction it.

Mr. WHITAKER, alluding to uncertainty of tenure, contended that in the case of a tenant-at-will the obligation to quit at the expiration of a six-months' notice was most objectionable. He believed, however, that landlords as a rule would be satisfied if their tenants had a longer time afforded them for making their arrangements to leave. The question of compensation for unexhausted improvements required grave consideration; and he, as a poor landlord, would not like unconditionally to consent to it himself, for the tenant might be a wealthy man, who chose to drain, use artificial manures, and erect costly buildings and sheds, all of which might improve the value of the property for the particular description of farming he pursued, such as, for example, the feeding of stock, when the farm itself might not be suitable to the purpose. He was of opinion, therefore, that all improvements by the tenant should receive the previous assent of the landlord; otherwise, in the case of a rich tenant and a poor landlord, the improvements might be carried to such an extent as, if not to ruin the latter, to compel him to mortgage his land.

Mr. WEBB supported the resolution as it came from the Business Committee, with regard to uncertainty of tenure. As

the law stood he might be in possession of a farm on the 1st of September; but the tenant-for-life having died the next tenant-for-life might come in and turn him out of possession on the 29th of the same month. In fact, a case of this sort had lately occurred in his county (Worcestershire). As to unexhausted improvements, it was the interest of every man, both the lessee and the tenant at will, that he should farm as well and invest as much money in the land in the last year when he went out as in the first year when he came in; it was equally the interest of the incoming tenant to have the land in the best possible condition. In the vale of Evesham, a few of the largest tenant farmers, holding among them about 8,000 acres, had met and laid down a short code of tenant-right, which was neither more nor less than that the incoming tenant or the landlord should pay the outgoing tenant for his unexhausted improvements; and that the outgoing tenant should be liable to a penalty for neglect, so that his successor should receive the farm in a state of perfection.

Mr. G. SMYTHIES, as a tenant farmer, objected to any compulsory interference by the Legislature between owner and occupier. He concurred with Mr. Whitaker in protesting against the landlord being compelled to make allowances to his tenants for improvements, whether he liked them or not. All he would ask the Legislature to do was to permit tenants for life to make these agreements, which they could not do at present. As to making it compulsory, he did not believe that farmers generally wished anything of the kind. They only wanted to enable those to do it who had not the power of doing it now.

Mr. NEILD pronounced the amendment of Capt. Craigie mere hair-splitting. For his part, he desired to approach the landlords' question with as much honesty and fairness as the tenants' question. If a just system of compensation for unexhausted improvements could be established, they might almost do without any leases at all. It was a delicate thing to go to a landlord and tell him that he must give a lease. If he (Mr. Neild) were the owner of an estate, he should like to do what he pleased with it. The landlord should, therefore, be left perfectly free and unfettered in that respect; and if any good was to be done, an endeavour should be made to bring about a union of feeling between him and the tenant. The necessity for compensation for unexhausted improvements, Mr. Neild illustrated by the case of a widow lady who, on the decease of her husband, was left with a large farm upon her hands. An enormous outlay had been made upon it; but she had no one to look to for compensation, and no resource but to trust to the kindness of the landlord (Hear, hear). There was a good deal of commotion in Parliament just now with regard to the Irish land question; but he was really beginning to think that we wanted some legislation of the sort in England also (Hear, hear). Upon the whole, he was of opinion that the uncertainty of tenure and the absence of compensation for unexhausted improvements did militate against the advance of agriculture, and that if a well-digested system of compensation could be arranged this country would very soon double the produce of her soil.

The amendment on being put was negatived by an overwhelming majority.

Mr. WHITAKER then moved to amend the original motion by making compensation conditional on the previous consent of the landlord to the improvements effected by the tenant; but no seconder appearing it fell to the ground, and the original motion was carried unanimously.

The other clauses in the resolution of the Business Committee, ascribing discouragement in the application of capital to agriculture to "unnecessary restrictions upon courses of cropping" and the "over-preservation of ground game," were also agreed to; and a vote of thanks to the chairman terminated the proceedings.

THE LATE MR. W. FISHER HOBBS.—The portrait of this distinguished agriculturist has, in accordance with the resolution passed at the last Meeting of the Committee, just been hung in the dining-room at The Farmers' Club, where it comes as a companion picture to that of the late Mr. Robert Baker, also painted by subscription. The likeness, however, is not equally good, although it is only fair to say that the artist, Mr. Knight, B.A., had but one sitting or so, when Mr. Hobbs was in very ill-health.

THE SOCIETY OF AGRICULTURISTS IN FRANCE—MEETING IN 1871.

At the Manchester meeting of the Royal Agricultural Society, a deputation from the French Society of Agriculture had, as we specially reported at the time, an interview with the Prince of Wales. This embassy came with the object of inviting his Royal Highness, as President of the National Agricultural Society of England, to become an honorary member of the French Agricultural Society, a request which was at once acceded to, and the union of the two bodies thus auspiciously inaugurated. But what is the French Society of Agriculture—or, more properly, The Society of Agriculturists of France? For some years past Englishmen have been tolerably familiar with French exhibitions, whether of stock or implements, and it would so seem rather late in the day to cement such a sympathy as is here implied. The agriculturists of France and the agriculturists of England should have been old friends, and, like the lodgers in Dickens's sketch, have interchanged mutual civilities and weekly papers long since. When we call to mind all the stories of what Brandreth Gibbs and Hall Maxwell did in Paris, and of the impression which the Babraham Downs and the Tillyfour Polls created, we might only interpret this visit as paid in particular compliment to the high position which our past President occupied otherwise than in his mere relations to agriculture. But it is not quite so. The Society of Agriculturists is the embodiment, or perhaps more precisely the effect, of the previous agricultural celebrations in France. These, as is well known, were too often far better conceived than carried out. Nothing could be more beautiful than the design, nothing more awkward than the execution; and matters came to a climax at Billancourt in 1867. As our own report then ran—"this incongruous scheme has been a most lamentable failure. Every expectation has been doomed to disappointment." And from the ashes of this failure arose the Society of French Agriculturists. To afford some really becoming illustration of steam ploughing M. Lecouteux, a landed proprietor and editor of the *Journal d'Agriculture Pratique*, collected subscriptions through the agency of his paper not merely sufficient to induce Messrs. Fowler and Messrs. Howard to work their several systems at Corbeil, near Paris, in the August of the same year, but with a very satisfactory balance still remaining. This surplus it was eventually determined to devote to the establishment of an agricultural society altogether independent of Government support or interference, and with our English national society as the model. M. Drouyn de Lhuys, the diplomatist, and one of the eight members of the Privy Council of the Empire was elected President, and M. Lecouteux Secretary, so that the venture was well launched, while it already numbers more than five thousand members, with a handsome fund wherewith to develop its intentions. On the Ollivier Ministry coming into office, the Society, after a hard fight, received its Charter from the Government, and is now accordingly one of the recognized institutions of France. There was a long sitting, extending indeed to many days, of the administration in February, to determine as to its foundation principles and course of action, and now the good ship may be said to be fairly afloat. Under the auspices of the Society of French Agriculturists a great Congress will be held in Paris during the month of May, 1871. There will be companion exhibitions of cattle and implements; "a combination" of all the rural Societies of Europe; investigations on the present knowledge of the art of agriculture, practical and scientific, and every possible stimulus offered for further advancement in the same direction. Nothing could look to be more whole-

some than this movement, as it is one which even a few years back it might have been altogether impossible to have originated in France; while in its infancy it does the English farmer the honour above all others to come over here again and again for advice and example. It had representatives both at Leicester and Manchester, who, we may be sure, were doing something more than paying empty compliments, but the rather profiting themselves by our experience of the last thirty years or so.

THE CENTRAL AND THE LOCAL CHAMBERS OF AGRICULTURE.

At a meeting of the Council of the North of England Chamber of Agriculture, the President, Mr. W. H. Charlton, Hesleyside, in the chair,

The SECRETARY reported that he had received the following resolution from the Devonshire Chamber: "That this Chamber, convinced of the necessity of more united action amongst the chambers of agriculture throughout the country, desires respectfully to submit that subject for their careful consideration, and to invite their cordial co-operation in suggesting and adopting such measures as may be deemed best calculated to promote among the various chambers a more united and harmonious course of action."

Mr. LAWSON cordially concurred in the object of the Devonshire Chamber, but it was not desirable to enter upon the subject without having given it that mature consideration which it deserved. He therefore moved that it be taken into consideration at the next meeting. He quite concurred that the Central Chamber did not at present correctly represent the local chambers—(Hear, hear from the President)—and he thought the Central Committee committed a great and fundamental error when they requested local chambers to send up deputies to consider and decide upon the question of agricultural statistics, and came to no decision upon the subject, clearly showing that the Central Chamber either chose an inopportune time for bringing the question forward or did not carry it to a solution which they ought to have been prepared to do.

The CHAIRMAN said he might add that, after the discussion upon turnpike roads at the meeting of the Central Chamber, which he attended, about one-fourth of the members left, and the question of agricultural statistics was discussed by the remainder.

Mr. LAWSON: I think I understood you that they displayed nothing in considering the turnpike roads to alter the conviction of what I said; and that they did not proceed to a decision upon it.

The CHAIRMAN: No. Mr. Hugessen said the Government were going to bring forward a bill to alter the incidence of local taxation in some way; but that there was no chance of anything being done about turnpike roads themselves this Session. It gave him a very bad opinion of the business habits of the Chamber.

Mr. C. D. BALLELY had great pleasure in seconding the motion. He quite concurred that the Central Chamber should be an associated chamber, and that time should be given to the local chambers to thoroughly discuss each question before it came before the Central Chamber, and arrived at a conclusion upon it.

The CHAIRMAN thought it would be difficult to get union among the chambers.

Mr. LAWSON thought it might be done; chambers of commerce did it.

Mr. DAND, Hauxley, thought they diffused their energies too much; they should grapple with some subject, local taxation, for instance, and devote all their energies to it. The incidence of taxation affected them more than anything else.

The CHAIRMAN: I think it does.

Mr. LAWSON: It is a national subject, but particularly affects the landed interest, because they have been left on what we may call a lee-shore, to take care of themselves.

Mr. DAND: And there seems to be an inclination to pay for every fresh scheme out of the local rates.

The resolution was then carried.

STALLIONS FOR THE SEASON, 1870.

[NONE BUT THOROUGH-BRED HORSES ARE GIVEN IN THIS LIST].

Name.	Colour.	Age.	Pedigree.	Performances.	Principal Performances.	No. Winners out by	Size of	Standing at	Apply to	Price.
A. I.	brown..	8	by Sweetmist, out of Juanita Perez, by Melbourne	by never appeared ..	—	—	—	Port Ennis, Clare	—	5 sovs., h. b. 3 sovs.
Abergeldie	chestnut	7	by Trumpeter, dam by Hero	started 18, won 1	won £1,185 at Exeter ..	untried.	—	Lowfield, Hooton	J. Gill	15 sovs.
Adventurer	bay	11	by Newminster, out of Palma, by Emilius ..	started 18, won 8	won Queen's Vase Ascot ..	14	—	Sheffield-lane Paddock ..	Mr. Overman	Full
Anglo Saxton ..	bay	9	by Ethelbert, out of Griselda, by Touchstone	started 9, won 5	won £770 (h.) at Ascot ..	1	—	East Isley, Berks.	Mr. Lowe	10 gs.
Armagnac	chestnut	10	by Faugh-a-ballagh, out of Bathilde, by Young Emilius	started 10, won 3	won £200 (h.) at Bath ..	untried	—	Greenville, Carrigrohilla	—	5 sovs., h. b. 3 sovs.
Arthur Wellesley	bay	19	by Melbourne, out of Lady Barbara, by Launceston	started 7, won 1	won Two-year-old Stakes at Manchester	14	—	Richmond, Yorkshires	Mr. Wright	10 gs.
Asteroid	bay	12	by Stockwell, out of Teetotum, by Touchstone	started 12, won 7	won Chester Cup	4	—	Middlethorpe, York ..	Mr. Smallwood ..	20 gs.
Atherstone	brown..	11	by Touchstone, out of Lady Harriet, by The Merry Monarch	started 42, won 16	won the St. Leger Handicap	3	—	Harlestone, Northampton	Mr. Wilson	15 gs.
Babbler	brown..	7	by Chit-chat, out of Linnet, by Kingston	never appeared	—	untried.	—	Port Ennis, Clare	—	5 sovs.
Baldwin	chestnut	10	by Rataplan, out of Anstrey, by Harkaway	started 11, won 3	won £245 (h.), Salisbury	untried.	—	Port Ennis, Clare	—	4 sovs., h. b. 3 sovs.
Beagle	bay	9	by Newminster, out of Plush, by Plenipotenliary	started 26, won 17	won £250 at Ascot	untried.	—	Easton Park, Wickham Market	J. Mackenzie	10 gs.
Bedman	brown..	15	by Weatherbit, out of Mendicant, by Touchstone	started 12, won 6	won the Derby	13	—	Lebourne Grange	Mr. Tweed	100 gs.
Bedminster	bay	8	by Newminster, out of Secret, by Melbourne	started 5, won 2	won £1,100 at Newmarket	untried.	—	Ravcliffe Paddock	Mr. Martin	6 gs.
Bel Demonio (late Harvest Mill)	chestnut	9	by Weatherbit, out of Augusta, by Birdcatcher	started 14, won 6	won £200 (h.), Stockton	2	—	Higfield, St. Alban's ..	Mr. Elmore	5 gs.
Ben Webster	bay	13	by Barnton, out of Bassiahaw, by The Prime Warden	started 31, won 6	won Chester Cup	4	—	Hengate, Beverley	Mr. Ellington	10 gs.
Best and Bravest, The	chestnut	9	by Rataplan, out of Phralia, by Gladiator ..	never appeared ..	—	untried.	—	Church End, Willenden	Mr. Post	5 gs., h. b. 3 gs.
Blarney	chestnut	9	by Claret, out of Mag on the Wing, by Magpie	started 7, won 6	won £250 at Shrewsbury	3	—	Roxborough, Ireland ..	—	10 gs.
Blinkhoolle	bay	8	by Rataplan, out of Queen Mary, by Gladiator	started 21, won 9	won £1,250 at Ascot	untried.	—	Waseley, Worcester ..	T. Edwards	10 gs.
Bonyfield	bay	12	by West Australian, out of Queen Mary, by Gladiator	never appeared ..	—	3	—	Alwalton, Peterboro' ..	J. Witty	7 gs., h. b. 3 gs.
Breadalbane	chestnut	8	by Stockwell, out of Blink Bonny, by Melbourne	started 24, won 9	won Prince of Wales S. Ascot	untried.	—	Whitwell, Cheshire ..	E. Heskinen	15 gs.
Brocket	bay	20	by Melbourne, out of Miss Slick, by Mulley Moloch	started 7, won 3	won Royal Hunt Cup ..	10	—	Wem, Salop	Mr. Clay	10 gs.
Broomfield	bay	8	by Stockwell, out of Queen Mary, by Melbourne	started 18, won 7	won Prince of Wales S., Newmarket	untried.	—	Elkham Hall, Brigg ..	Mr. Wighton	15 gs., h. b. 5 gs.
Brother to Bird on the Wing	black ..	17	by Birdcatcher, out of The Pairie Bird, by Touchstone	started 16	—	7	—	Doncaster	Mr. Ounningham ..	10 gs.
Brown Bred	brown..	8	by Weatherbit, out of Brown Agnes, by West Australian	started 25, won 9	won £500 at Newmarket ..	—	—	Stanton Shifnal	Mr. Eyles	10 gs.
Buckenham	bay	11	by Voltigeur, dam by Ithuriel	started 14, won 6	won Buckenham Stakes ..	untried.	—	Wem, Salop	Mr. Clay	10 gs.
Cambuscan	chestnut	9	by Newminster, out of Arrow, by Elane	started 13, won 7	won July Stakes, Newmarket	untried.	—	Park Paddock, Newmarket	Mr. Savage	25 gs.
Camrino	bay	12	by Stockwell, out of Syphonia, by Touchstone	started 41, won 2	won Doncaster Stakes ..	7	—	Bavell, York	Mr. Martin	15 gs.
Canary	bay	13	by Orlando, out of Palma, by Plenipoten	started 21, won 2	won Royal H. Cup, Ascot	untried.	—	Palmerston, Ireland ..	—	5 sovs.
Cannoble	bay	17	by Melbourne, out of Lady Laurell, by Hornet	started 3, won 2	won Metrop. Handicap	19	—	Oxington, Oswestry	Mr. Thomas	6 gs.
Cavalcade	bay	11	by Kingston, out of Delinquence, by Defence	started 9, won 4	won the Derby	15	—	Holywell Stud Farm, Walsford	Mr. C. Smealing ..	20 gs.

Carlson	bay	19	by Riffman, out of Countess, by Sweetmeat.....	started 14, won	4 won £1,095 at Newmarket.	3	Sabrina	Singlestone, Kirkham ...	Mr. J. Oason ...	6 gr., h. b. 3 gr.
Catmer	chestnut ..	7	by Stockwell, out of Midsummer, by Mel-	started 2,	—	—	Pace	Burgh-by-Sands, Cus-	—	7 gr.,
Cathedral	bay	11	by Stockwell, out of Solina, by Orlando	started 3, won 1	1 won Finton Slakes....	7	—	Hooton, Chester	Stud groom	25 sovs.
Cavendish	chestnut ..	9	by Newminster, out of Soljen Moments, by Mel-	started 10, won 3	3 won Gt. Nitham-H., York	untried.	—	Middlethorpe, York....	Mr. Smallwood... 15 gr.	—
Cavendish	brown ..	14	by Valguier, out of The Countess of Burlington,	started 3, won 1	1 won Coventry Slakes ..	19	Easy	Fairfield, York	Stud groom	13 gr.
Chandler d'In-	chestnut ..	16	by Orlando, out of Industry, by Pliam	started 14, won 3	3 won the Graveltrie	20	Fripouler	Swalcliffe, Banbury....	Mr. Gulliver	30 gr.
Chart	brown ..	18	by Touchstone, out of Mountain Sylph, by	started 27, won 3	3 won G. Duke Michael...	20	Blarney	Rawcliffe Paddocks ..	Mr. Martin	15 gr.
Chart	chestnut ..	11	by Barbaton, out of Clarissa, by Pantaloon....	started 14, won 3	3 won £335 at York	—	—	Wentworth, Rotherham	E. Oates.....	7 sovs., h. b. 3 sovs.
Charmers	chestnut ..	9	by Duo an Divurres, dam by Slight-of-Hand....	never appeared ..	—	—	—	Roxboro', Ireland	—	24 sovs.
Chenmore	bay	6	by The General, out of Coelia, by West-Austra-	never appeared ..	—	—	—	Chautown, Stackallen	—	6 sovs., h. b. 34 sovs.
Colored, The	bay	11	by The Baron, out of Catherine Hayes, by Lanercost	started 26, won 7	7 won Chesterfield Slakes	1	b. out of Morgan	Croft, Darlington	Mr. Winteringham	10 gr.
Costs	grey	11	by Krollk, out of Ousadniza, by Boolat.....	never appeared ..	—	—	la Faye	Woolscot, Rugby	Mr. Scott	10 gr.
Count Beadale	bay	9	by Stockwell, out of Countess of Albemarle, by	started 30, won 5	5 won £64 (h.) at Beverley	untried.	—	Wistow, Selby	S. Scholes.....	grats, h. b. 3 gr.
Count, The	bay	13	by Andover, out of Harlot, by Mang	started 31, won 1	1 won Zealand Biennial ..	3	Orion	Norton, Malton	Mr. W. l'Anson ..	30 gr., h. b. 5 gr.
Cransend	bay	7	by King Tom, out of Agnes, by Pantaloon....	started 32, won 7	7 A Prize Stallion	untried.	—	Harlestone, Northamp-	Mr. Wilson	10 gr., h. b. 5 gr.
Croft	chestnut ..	14	by Newminster, out of Lioness, by Ballinkelle ..	started 43, won 10	10 won Qn.'s Plate, Carlisle	untried.	—	ton	—	4 gr., h. b. 3 gr.
Dean, The	chestnut ..	6	by Newminster, out of Miriam, by Malcolm ..	started 25, won 1	1 won £255 (h.) Warwick	untried.	—	Kilmichey, Maryboro'	J. Arnold	5 gr., h. b. 2 gr.
Deerwood	bay	10	by Orlando, out of the Arrow, by Shane	never appeared ..	—	—	—	Turf Tavern, Doncaster	—	10 gr., h. b. 3 gr.
Defender	bay	14	by Windhound or Melbourne, out of Ellen	started 37, won 6	6 won £375 at Chester....	6	Rampart	Easton, Dunmow	Mr. J. Hindcliffe	25 gr.
Defender	bay	6	by Horn, by Redbank	—	—	—	—	Lambourne, Berks	—	—
D'Almeida	brown ..	6	by Parmesan, dam by Chanticleer	started 15, won 5	5 won £290 at Goodwood	untried.	—	Rufford Abbey, Oller-ton	Mr. Coullas....	10 gr.
Donald Caird ..	bay	6	by Annandale, out of Nugget, by Melbourne ..	never appeared ..	—	—	—	Hasketon, Woodbridge.	Capt. Barlow ..	5 gr.
Don John	bay	13	by Wild Dayrell, out of Circassian Maid, by	started 39, won 8	8 won £100 at Reading ..	untried.	—	Legan Hall, Ireland....	—	5 gr., h. b. 3 gr.
Donnybrook ..	brown ..	10	by Sprig of Shillelagh, out of Fly by Iago	started 35, won 8	—	untried.	—	Dorking	Mr. Legge	5 gr., h. b. 3 gr.
Dooble X	brown ..	10	by Colonel, out of Miss Tom, by Crozier	started 2, won 1	1 won £105 at The Curragh	untried.	—	Bromyard, Hertford ..	Mr. J. Day	5 gr.
Dr. Syntax	bay	10	by Newminster, out of Miss Lavinia, by Verulam	started 35, won 7	7 won £255 (h.) Warwick	untried.	—	Danebury	Mr. Ferres	10 gr., h. b. 5 gr.
Duke, The	bay	8	by Lord, out of Bay Collin, by Orlando	started 26, won 18	18 won Goodwood Cup	untried.	—	Yardley, Birmingham..	Mr. Ferres	40 gr. (full).
Dundas	bay	13	by Lord of the Isles, out of Marmalade, by	started 8, won 6	6 Second for the Derby ..	27	Markham	Pain'a-yard, Waltham	S. Boone	30 gr.
Earl, The	bay	5	by Young Melbourne, out of Bay Collin	started 19, won 13	13 won Ascot Derby	—	—	Cross	Mr. Sedgewick...	30 gr.
Eldon	bay	13	by The Flying Dutchman, out of Black-eyed	started 47, won 14	14 won Granby Handicap...	untried.	—	Gross Roads, Scen,	—	5 sovs., h. b. 3 gr.
Eldon	bay	9	by Susan, by Faugh-a-Ballagh	—	—	—	—	Ireland	—	—
Ellard	bay	8	by Rataplan, out of Ellermore, by Chanticleer	started 31, won 13	13 won £250 (h.) Liverpool	untried.	—	Benham, Newbury	Stud groom	25 gr.
Ely	bay	9	by Kingdon, out of The Bloomer, by Melbourne	started 30, won 19	19 won Goodwood Cup ..	1	Lincoln	Parfield, York	Mr. Messenger...	35 gr.
Eschequer	chestnut ..	11	by Stockwell out of Stump, by Emilius	started 38, won 8	8 won £400 at Newmarket	3	Gladslee	Corham, Surrey	Mr. Addison	10 gr., h. b. 5 gr.
Fiscal	brown ..	14	by Mountain Deer, dam by Ishmael	started 6, won 2	2 won the Angley Slakes	3	Rose	North Grimston, Malton	J. Harrison	5 gr., h. b. 3 gr.
Fine-Roland ..	chestnut ..	5	by Orlando, out of Stamp, by Emilius	started 15, won 3	3 won 3,000 Gr. Slakes...	3	Miss Roland ..	Hurtisbourne, Whit-	—	15 gr.
General Hest ..	chestnut ..	13	by The Nabob, out of Lady Alice, by Lanercost	started 74, won 31	31 won St. Lis Handicap,	—	—	church	—	—
General Hest ..	chestnut ..	13	by The Nabob, out of Lady Alice, by Lanercost	started 74, won 31	31 Northampton	—	—	Palmerstown, Naas....	—	5 sovs., h. b. 3 gr.

STALLIONS FOR THE SEASON 1870—(Continued).

Name.	Colour.	Age.	Pedigree.	Performances.	Principal Performance.	No. of Winners out by	Sire of	Standing at	Apply to	Price.
General Peel.....	bay	9	by Young Melbourne, dam by Orlando.....	started 12, won 4	won the 2,000 Guinea ..	—	—	Swadcliffe, Banbury ..	Mr. Gulliver	95 gr.
Gladstair.....	bay	8	by Monarque, out of Miss Gladstair.....	started 14, won 11	won the Derby ..	untried.	—	Hans de Danne, France ..	—	100 gr.
Glenmason.....	bay	10	by Colborne, out of Annette, by Prince ..	started 11, won 5	won Stew's Op. Goodwood ..	14	Jack in the Green ..	Warden, Biggleswade ..	T. Morgan	9 gr., h. b. 4 gr.
Grey Plover.....	grey	10	by Bratcher, out of Whim, by The Doctor ..	started 9	—	15	Flower, The	Baunart, Ireland	—	5 gr., h. b. 3 sovs.
Gunsbot.....	brown	10	by Sir Hercules, out of Y and-arm by S. Anchor ..	started 18, won 8	won Cleveland Handicap ..	18	Monitor	Bushbury, Wolverhampton ..	W. Phillips	10 gr.
Hermit, The.....	chestnut	6	by Newminster, out of Seclusion, by Talnor ..	started 28, won 8	won the Derby ..	untried.	—	Blackburn, Lincoln	W. Phillips	15 gr.
Heddon.....	bay	7	by Stockwell, out of Flax, by Surplice	never appeared ..	—	—	—	Went, Salop	Mr. Clay	10 gr.
Hospitality.....	brown	17	by Robinson, out of Envy, by Perion	started 28, won 6	won City and Suburban ..	13	Redmire	Rayton	—	5 gr., h. b. 3 gr.
Janitor.....	bay	7	by King Tom, out of Mrs. Hobson, by Bay ..	started 28, won 6	won 2,075 at Epsom ..	untried.	—	Brail Sword, Dublin ..	Mr. A. Fisher ..	5 gr., h. b. 3 gr.
Joco	brown	10	by Joe o' Soc, out of Countess of Westmorland, ..	started 16, won 3	won 2935 (h.) Epsom ..	untried.	—	Friar's Field, Tip ..	—	4 sovs., h. b. 3 sovs
Joey Jones.....	bay	12	by Newminster, out of Mrs. Dodds, by Irish ..	started 36, won 10	won Northumberland ..	3	Number Nip	Bellisle, Richmond, ..	—	10 gr.
John Halifax.....	brown	7	by The Ugly Duck, dam by Anandale	started 7, won 0	Plate ..	untried.	—	Yorkshire	J. Manning	10 gr., h. b. 3 gr.
Joan.....	brown	14	by West Australian, out of Peasant Girl, by ..	started 36, won 0	won a Queen's Plate ..	5	Chawbeacon	Orlingbury, Wallingboro ..	Mr. Thora	19 gr.
Jalisco.....	bay	6	by St. Albans, out of Jalle, by Nun Appleton ..	started 34, won 13	best Hermit in a Match ..	untried.	—	Lymington, Haits	—	—
Jupiter	brown	8	by Weatherbit, out of Athena Palas, by Bird ..	started 31, won 5	won £170 at Edinburgh ..	untried.	—	Croft Stud Farm, ..	Mr. Wintering- ..	30 gr.
Kempdown.....	bay	10	by Kingston, out of Brightonia, by Touchstone ..	started 2, won 0	won the Derby	—	—	Darlington	Mr. Over	5 gr., h. b. 9½ gr.
Kettledrum.....	chestnut	12	by Knaplan, out of Hybla, by The Provost ..	started 8, won 4	won the Derby	9	Bandmaster	Bromyard, Herefordsh ..	—	5 gr.
King Alfred.....	bay	6	by King Tom, dam by Bay Middleton	started 21, won 2	won 24,100 at Ascot ..	untried.	—	Whitwell, Chiberos ..	R. Haselton	30 gr.
King Christian.....	bay	7	by Stockwell, out of Ferrara, by Orlando ..	started 21, won 1	won £150 (h.) Brighton ..	—	—	Mentmore, Bucks	Mr. Markham ..	30 gr.
King of Trumps.....	chestnut	21	by Valopede, out of Mrs. Gill, by Vialor ..	started 47, won 13	won the Port ..	48	Deefoot	Old Warden, Biggleswade ..	T. Morgan	5 gr., h. b. 3 gr.
King Tom	bay	19	by Harkwede, out of Pocahontas, by Glencoe ..	started 6, won 3	ran second for Derby ..	103	Hippia	Root, Chittrere	C. Haselton	18 gr.
Knight of Khari.....	bay	15	by Newwith, out of Pocahontas, by Glencoe ..	started 10, won 2	won Whitley Stakes ..	44	The Colonel	Mentmore, Bucks	C. Haselton	Full.
Knight of St. Bay	bay	18	by the Knight of St. George, out of Pocahon ..	started 28, won 4	won the Columa	18	Tenedos	Stanton, Shifnal	Mr. Eyle	10 gr., h. b. 5 gr.
Patriot	bay	7	by Knight of St. Patrick, out of Belke, by ..	started 18, won 3	won Newmarket Derby ..	—	—	Burghley, Stamford ..	—	10 sovs., h. b. 3 sovs.
Crescent	chestnut	13	by The Knight of St. George, out of Ava, by ..	started 5, won 3	won Wothorpe Biennial ..	4	Thorn	Yardley, Birmingham ..	Mr. Ferres	30 gr.
Kt. of the Thistle.....	bay	11	by Stockwell, dam by Orlando	started 7, reed. fl.	ran third for 2,000 gr.	7	Beauty	Burghley, Stamford ..	—	8 sovs., h. b. 3 sovs
Knowsley	bay	11	by Orlando, out of Boarding School Miss, by ..	started 7, won 4	won 2960 at Newmarket ..	7	Romance	Telworth, Thame	Mr. Ireland	30 gr.
Lacydes	bay	30	by The Cure, out of Elphine, by Emilius	started 26, won 103	won York County Plate ..	77	East Lynne	Glasgow Paddock, Don- ..	Mr. Cunningham ..	15 gr.
Lambton	bay	7	by Colsterdale, out of Algeba, by Mathematical ..	started 28, won 9	won Ceasar's Inch	—	—	Low-street, Bedale	Mr. C. Ashdon ..	35 gr.
Lecturer.....	brown	8	by Orlando, out of Lady Roden, by West Aus- ..	started 26, won 13	won 2,630, Newmarket ..	—	—	Mentmore, ..	Mr. Markham ..	30 gr.
Liddington	brown	15	by Sir Hercules, out of Yard Arm, by Sheet ..	started 30, won 15	won Metropolitan Stakes ..	18	Life Guardman ..	Bursara ..	—	10 gr.
Lifboat	brown	15	by Sir Hercules, out of Yard Arm, by Sheet ..	started 30, won 15	won Metropolitan Stakes ..	18	Life Guardman ..	Rawcliffe, York	Mr. Martia	10 gr.
								Bushbury, Wolver- ..	Mr. Phillips	10 gr.

Lightning	brown ..	19	by Maggie, out of Flash, by Philip the First ..	started 4, won 5	Queen's Plate, Curragh ..	6	untried.	Lenora	Gussetown, Navan	5 gr., h. b. 2 1/2 gr.
Lilaver	chestnut	18	by Stockwell, out of Ennui, by Bay Middleton ..	started 30, won 8	from Mich. £1000, Newmarket ..	7	untried.	Hawthorn	Groft, Darlington	12 gr., h. b. 3 gr.
Lord Clifden	bay ...	10	by Newminster, out of The Slave, by Melbourne ..	started 19, won 7	from the St. Leger				Moorlands, Skelton, York ..	30 gr.
Lord Osgurgh	brown ..	8	by M.D., out of Spinster, by Flaccator ..	started 32, won 14	Royal Whip, Curragh ..				Castle-down, Rochester, Cork ..	5 gr., h. b. 3 gr.
Lord Lyon	bay ...	7	by Stockwell, out of Paradigm, by Paragon ..	started 21, won 17	from the Derby				Naas, Dublin ..	30 gr.
Lord of the Isles	bay ...	14	by Touchstone, out of Pair Helen, by Pantaloon ..	started 10, won 4	from 2,000 gr. States ...	33	untried.	Dundee	Rusley, Lambourne	10 gr.
Loret	black ..	18	by The Confessor, out of Julia, by Jerry ..	started 17, won 3	from Oxford Gr. States ...		untried.		Kilgallon, Radnor	10 gr.
Leasage	bay ...	8	by Siretman, out of Down with the Dust, by Star of Erin ..	started 67, won 10	from the Cambridgehire ..				Hawcliffe Paddock ..	16 gr.
Leasler	brown ..	7	by The Cure, or Lord Fauconbourg, out of Starlight, by Kremlin ..	started 26, won 7	from £150 at Chester ..		untried.		Moorlands, York	10 sovs.
Lusdyfoot	bay ...	17	by Sweetmeat, out of Mulligataway, by Econo ..	started 4		3		Garlees	Laglan Hall Stables ..	5 gr., h. b. 3 gr.
Macaroni	bay ...	7	by Sweetmeat, out of Jocose, by Pantaloon ..	started 9, won 7	from the Derby	13	untried.	Pirotty	Hooton, Chester	40 sovs.
Magician	brown ..	10	by The Flying Dutchman, out of Magic, by Melbourne ..	started 11, won 3	from £25 at Newmarket ..				Castle Pollard, Ireland ..	6 sovs.
Malasia	bay ...	10	by Ivan, out of Coquette, by Napier ..	started 3, won 1	from £300 at Curragh ...		untried.	Avoncourt	Salem, Middleton, Cork ..	5 gr., h. b. 2 1/2 gr.
Malstone	bay ...	13	by King Tom, out of Bistr, by Bay Middleton ..	started 10, won 2	from £300 at Stockbridge ..	1			Belhus, Romford	10 gr., h. b. 5 gr.
Man-at-Arms	bay ...	13	by Kingston, out of Paradigm, by Paragon ..	started 55, won 7	from St. Leger Handicap ..	3	untried.	Rever	Alfredston, Salisbury ..	15 gr.
Mandrake	chestnut	6	by Weatherbit, out of Mandragora, by Rain ..	started 31, won 15	from £100 at Liverpool ..				Plain's Yard, Waltham ..	25 gr.
Marquis, The	bay ...	11	by Stockwell, out of Cinizelli, by Touchstone ..	started 8, won 7	from the St. Leger	9		Vicount	Dringhouses, York	25 gr.
Master Bagot	grey ...	16	by Faugh-a-Ballagh, out of Victrola, by Speculation ..	started 73, won 10	from £430 at Newton ..	5		Prima Donna	Cardistown, Ardee	5 gr., h. b. 3 gr.
Master Fenton	brown ..	11	by King Tom, out of Anne Page, by Touchstone ..	started 13, won 6	from the Rutland Stakes ..	5		Young Fenton	Portlough, Brighton	10 gr., h. b. 3 gr.
Master Richard	chestnut	9	by Tedington, out of Emery, by Weatherbit ..	started 33, won 8	from in all £2,000		untried.	Lord of the Valley	Solomda, Clonsilla	7 gr.
Mentmore	bay ...	15	by Melbourne, out of Emerald, by Defence ..	started 34, won 11	from the Prendergast ...	5			Hampton Court	10 gr.
Miner, The	chestnut	9	by Rataplan, out of Manguesh, by Birdcatcher ..	started 13, won 3	from St. Yorkshire Stakes ..			Cameron	Low-street, Bedale	10 gr.
Mogador	bay ...	10	by King Tom, out of Moonshine, by Orlando ..	started 19, won 3	from £276 at Newmarket ..	3			Water Tower, Rugby ...	10 gr.
Moldavia	chestnut	8	by Hosopdar, out of Tisiphone, by Gladiator ..	started 21, won 5	from Hamilton Plate, Thirsk ..		untried.		Catterick Bridge	10 gr.
Monarch of the Glen	chestnut	7	by Stockwell, out of Glegowrie, by Touchstone ..	started 12, won 3	from £750 at Newmarket ..		untried.		Mount Stud Paddock ..	7 gr., h. b. 3 gr.
Monarque	bay ...	18	by Sting, The Baron, or The Emperor, out of Peeters, by Royal Oak ..	started 7, won 3	from Goodwood Cup	33		Gladiator	Drogheda ..	100 gr.
Moreos	bay ...	11	by King Tom, out of Moonshine, by Orlando ..	started 11, won 1	from a hurdle race at Worcester ..		untried.		Haras de France ..	5 gr., h. b. 3 gr.
Molloy	bay ...	19	by Touchstone, dam by Lanercost	started 24, won 3	from £200 at York	1		Huntsman	North Grimston, Malton ..	7 gr., h. b. 3 gr.
Mosley	bay ...	9	by Tedington, out of Sabra, by Pantaloon ..	started 113, won 3	from the Brighton Cup ..				Burgh Sands, Carlisle ...	3 gr.
Nesby	bay ...	23	by Cotherton, out of Victrola, by Speculation ..	never appeared ..	from 2nd prize, R.A.S. ...			Charon	Swallow Place, Guildford ..	10 gr., h. b. 5 gr.
Neptunus	brown ..	11	by Weatherbit, out of Athena Pallas, by Birdcatcher ..	started 17, won 5	from Goodwill Stks. York ..	8			Swallow Place, Guildford ..	10 gr., h. b. 5 gr.
Nerville	bay ...	19	by Napper, out of Sally Suobh, by Sandbeck ..	started 16, won 7	from St. Northern Hand ..	23		Honest John	Swallow Place, Guildford ..	10 gr., h. b. 5 gr.
Norcastle	chestnut	14	by Newminster, out of Mary Aislable, by Melbourne ..	started 32, won 16	from Doncaster Cup ...	15		Charnwood	Park Paddock, Newmarket ..	40 gr.
North Briton	brown ..	4	by Priad, out of Timandra, by Voltaire ..	never appeared ..				Saffolk	Winstow, Bucks	5 gr., h. b. 2 1/2 gr.
North Lincoln	bay ...	14	by Priad, out of Charlotte, by Redbank ..	started 31, won 17	from the Criterion	20		Lamley	Mentmore, Bucks	29 gr.
Northampton	chestnut	16	by Nabob, out of The Princess, by Merry Monarch ..	started 3, won 3	from the Finsbury	5			Northbourne, Emsworth ..	50 gr.
Old Trick	chestnut	11	by King Tom, out of the Hipped Mare, by P ..	started 7, won 6	from the Criterion	1		Nelly	Willoby, Grantham ..	50 gr.
Old Calabar	bay ...	11	by King Tom, out of the Hipped Mare, by P ..	started 7, won 6	from the Criterion				Newmarket ..	10 gr.
Orat	bay ...	13	by Orates, out of Lady Louisa, by Touchstone ..	never trained ..		8		Skinner	Alfriston, Sussex	Full.
Ouston	bay ...	18	by Melbourne, out of Alice Hawthorn, by Mulier Moloch ..	started 11, won 7	from Queen's Vase	18		Rusley	Newmarket ..	12 gr.

STALLIONS FOR THE SEASON, 1870—(Continued).

Name.	Colour.	Age.	Pedigree.	Performances.	Principal Performance.	No. of winners out by.	Size of	Standing at	Apply to	Price.
Oxford	chestnut	13	by Irish Birdcatcher, out of Honeydew, by Plenipotentiary	started 9, won 2	won £930 at York	27	Student	Yardly, Birmingham ..	Mr. Forres	30 gs.
Parnassian	brown ..	13	by Sweetmeat, out of Gruyère, by Verulam ..	started 28, won 10	won Great Metropolitan ..	12	Ravioli	Rufford Abbey, Ollerston	Mr. Coultas	30 gs.
Peer, The	bay	7	by Newminster, out of Main Brace, by Sheet Anchor	started 19, won 4	won £900 at Newmarket ..	—	—	Park Paddock, Newmarket	Mr. Savage	10 gs.
Peon	bay	9	by Alarm, out of Repentance, by Annandale ..	started 16, won 5	won Ascot Derby Stakes ..	untried.	Indigestion	Sutton Place, Guildford	G. Payne	10 gs.
Plum Pudding ..	brown ..	13	by Sweetmeat, out of Fionnuala, by Birdcatcher	started 3,	—	10	Knight of the	Palmerstown, Naas ...	—	5 sovs.
Prime Minister..	brown ..	22	by Melbourne, out of Pantalonnade, by Pantaloon	started 31, won 8	won the Port	64	Carter	Highfield, St. Albans..	Stud groom	25 gs.
Prince Leopold ..	bay	3	by Mackroni, out of Mystery, by Angus ..	started 1, won 0	—	—	—	Lowfield, Horton	J. Gill	10 sovs.
Prince Louis ..	bay	5	by Stockwell, out of Hesse Homburg, by Robert de Gorham	started 0, won 1	won £37 at Liverpool ..	—	—	Measham, Atherstone ..	Arthur Fisher ..	6 sovs., h. b. 3 sovs.
Prince Plausible	bay	19	by King Tom, out of Longitude, by Inheritor	started 39, won 5	won Chesterfield Cup ..	untried.	—	Shipton, Mkt. Weighdon	W. Shaw	10 gs., h. b. 5 gs.
Promised Land..	bay	14	by Jericho, out of Glee, by Touchstone ..	started 17, won 2	won the 2,000 Gs.	23	Veni	Alvediston, Salisbury..	—	—
Bake, The	bay	6	by Wild Dayrell, out of England's Beauty, by Birdcatcher	started 3, won 2	won £4540 at Newmarket ..	untried.	—	Newmarket	Messrs. Barrow..	30 gs.
Ranger, The	brown ..	10	by Voltigeur, dam by Gardham	started 11, won 2	won the Grand Prix de P.	6	Scout	Newmarket	Messrs. Barrow..	13 gs.
Rapid Rhone ..	roan	19	by Young Melbourne, dam by Lanercost ..	started 21, won 9	won 9 ran third for the Derby ..	3	Barclay of Erin ..	Blackney, Lincoln	Mr. Bartholomew	30 sovs., 5 gs.
Rataplan	chestnut	20	by The Baron, out of Pombonias, by Glencoe	started 71, won 43	won 21 Royal Plates ..	72	Kettledrum	Tickhill Castle Farm ..	W. Goode	80 gs.
Battle	chestnut	6	by The Fellow Buck, out of Hambel, by Camel	started 7,	—	93	Longdown	Lymington	Mr. Thorne	10 gs., h. b. 5 gs.
Rescue, The	chestnut	6	by Lifeboat, out of Whitley, by Womersley ..	started 16, won 2	won £100 at Chester ..	untried.	—	Bourton-on-the-Hill ...	D. Gladwell	5 gs., h. b. 3 gs.
Robin Hood	bay	7	by Wild Dayrell, out of The Chase, by Venison	started 20, won 1	won £1,630, Newmarket ..	—	—	Chilton, Hungerford ...	Mr. T. Hodgson ..	15 gs.
Rogue Dragon ..	chestnut	12	by Windhound, out of Paradigm, by Paragon	started 7, won 1	won dead heat Goodwood ..	—	—	Leicester	Messrs. Bailey ..	7 gs.
Saccharometer ..	black ..	10	by Sweetmeat, out of Defamation, by Lago ..	started 34, won 12	won £715 at Ascot	—	—	Stanton, Shiffnal	Mr. Eyles	15 gs.
Scottish Chief..	bay	9	by Lord of the Isles, out of Miss Ann, by The Little Known	started 7, won 4	won Ascot Cup	1	Lady of Lyons ..	Croft, Darlington	Mr. Winteringham	30 gs.
Selim	bay	7	by Ivan, out of Light of the Harem, by Magpie	started 39, won 13	won Irish Derby Stakes ..	untried.	—	Glomulak, Carlow	—	5 sovs., h. b. 2 sovs.
Sharper, The	brown ..	7	by Ellington, out of Overreach, by I Birdcatcher	started 9, won 4	won £36 at Newmarket ..	—	—	Leatherhead	Mr. Constable ..	5 gs., h. b. 3 gs.
Simple Simon ..	brown ..	13	by Woodcock, out of Nicheing, by Ion	started 10, won 4	won Northampton Stakes ..	6	Simple Maid	Wenthead, Oxford	Mr. Truobee	10 gs., h. b. 2 gs.
Sincerity	brown ..	12	by Red Hart, out of Integrity, by Van T. Camp	started 17, won 9	won £980 at Epsom	—	—	Burg-by-Sands, Crisal ..	Mr. Cawley	7 gs., h. b. 3 sovs.
Shedding	bay	9	by Teddington, out of Juanita Perez, by Melbourne	started 6, won 0	—	—	—	Knignton, Radnor	Mr. Griffiths	10 gs.
Skirmisher	bay	16	by Voltigeur, dam by Gardham	started 23, won 8	won Ascot Cup	22	Ryalworth	Rufford Abbey, Ollerston	Mr. Coultas	10 gs.
Soapstone	bay	10	by Touchstone, out of Miriam, by Malcolm ..	started 40, won 14	won £600 at Worcester ..	untried.	—	Newmarket	Mr. Jarvis	10 gs., h. b. 2 sovs.
Solon	bay	5	by West Australian, dam by Birdcatcher ..	started 17, won 9	—	—	—	Ratbridge Cottages ..	—	5 sovs.
Speculum	bay	5	by Vedicite, out of Dorallie, by Alarm of Orleans	started 23, won 10	won third for the Derby ..	untried.	—	Moorlands, York	Stud groom	15 gs.
St. Albans	chestnut	13	by Stockwell, out of Belbery, by The Libel ..	started 8, won 2	won St. Leger	51	Julius	Hampton Court	W. Scott	50 gs.
Sultana	black ..	17	by Touchstone, out of Florence, by Velociped ..	never appeared	—	3	Shorter	Sheffield Lane Paddock	—	10 gs., h. b. 2 gs.
Stockinger	bay	11	by Stockwell, out of Lady Evelyn, by Don John	started 24, won 13	won £605, Northampton ..	—	—	Hucknell, Salop	Mr. F. Slaven ..	7 gs., h. b. 3 gs.
Stockwell	chestnut	20	by The Baron, out of Pombonias, by Glencoe	started 21, won 12	won St. Leger	179	Blair Athol	Hooton, Chester	John Griffiths ..	Full.
Stratford, Bro. to	brown ..	10	by Young Melbourne, dam by Genucopy ..	started 4, won 1	won £250 at York	—	—	Husband's Boworth, Rugby	Mr. J. Bennett ..	15 gs.
Stratocruiser ..	bay	7	by Newminster, out of Soavenby, by Chanticleer	started 33, won 11	won 04, Yorkshire Stakes ..	—	—	Boythorpe	Mr. Bird	15 gs.
Strutrocks	chestnut	5	by Thornhamby, out of Sunflower, by Bay Middleton	started 9, won 1	—	—	—	Aldford, Cheshire	Mr. Parker	10 sovs., h. b. 5 sovs.

Surplice	brown	26	by Touchstone, out of Crucifix, by Friar	started 16, won 9	from the Derby	50	Lady Cilmen	Hasketon, Woodbridge	10 gr.
Supplication	bay	8	by Mars, out of Rose, by Baron	started 16, won 11	won £750 at Goodwood	untried.	—	New Park, Hertford	5 gr., h. b. 3 gr.
Symington	bay	8	by Teague, out of Midia, by Soudar	started 26, won 4	won £260 at Stockbridge	untried.	—	Hartshorne Pl., Wilt	18 gr.
Thornaby	chestnut	13	by Melbourne, out of Alice	started 94, won 14	won the Derby	50	Sunshine	Croft, Darlington	Mr. Winteringham Full.
Thunderbolt	chestnut	13	by Hawthorn, by Muley Molech	started 96, won 18	won the Stamford Plate	19	Idalia	Sutton Place, Guildford	5 gr., h. b. 3 gr.
Tin Whiffler	brown	11	by Van Galen, out of Sibyl, by Ugly Back	started 26, won 11	The Goodwood Cup	0	Midsummer	Groome, Worcester	18 gr.
Tom Bowline	bay	13	by The Flying Dutchman, out of Miss Bore,	started 13, won 4	won 4 Sweepstakes of £500 at Newmarket	7	Zetina	Lymington, Hanis	86 sovs.
Tom King	bay	7	by King Tom, dam by Birdcatcher	started 4, won 1	won a Queen's Plate at	—	—	Rathbridge, Curragh ..	4 sovs., h. b. 3 sovs.
Touchwood	bay	14	by Touchstone, out of Bonnie Bee, by Galanthus	never appeared ..	Curragh	—	Rhoda	New Park, Hertford ..	5 gr., h. b. 3 gr.
Teuchobatho	bay	13	by Leagbow, out of Legardemain, by Pantalo	started 16, won 11	ran second for the Derby ..	6	White Duck	Ulverston	10 gr.
Trumpeter	chestnut	14	by Orlando, out of Caratina, by Redbank	started 4, won 2	won Kemarack Stakes	48	Lady Elizabeth	Busby Paddocks	30 gr.
Tyredale	bay	8	by Warlock, out of Queen of Tyne, by Tom	started 26, won 4	won £750 (h) at Shrewsbury ..	untried.	—	Sheffield Lane Paddocks ..	15 gr.
Umpire	chestnut	13	by L. Conate, out of Alice Carmel, by Imp	started 40, won 13	won £265 (h) Goodwood ..	1	Sundew	Groome, Worcester	5 gr.
Usses	brown	8	by Stockwell, out of Prairie Bird, by Touchstone ..	started 9, won 1	won £75 (h) at Oxton	untried.	—	Malden, Richmond	13 gr.
Union Jack	bay	9	by Jean, out of Caprice, by Coronation	started 9, won 3	won £200 at the Curragh	untried.	—	York	5 gr., h. b. 3 gr.
Verdant	chestnut	8	by Maryat, out of Maid of Palmyra, by Py	started 16, won 3	won £210 (h) at York	untried.	—	Portside, Brighton	10 gr., h. b. 3 gr.
Verdier	bay	5	by Weatherbit, out of Palmyra, by Pyrrhus	never appeared ..	—	—	—	Woodside Court, Croy ..	5 gr., h. b. 3 gr.
Victorious	bay	11	by Newminster, dam by Jeremy Diddle	started 19, won 8	won St. Leger	86	Buckstone	Danbury	15 sovs.
Volunteer	brown	23	by Voltaire, out of Martha Lyna, by Molatto ..	started 11, won 6	won Nursery Stakes	126	—	Able, Richmond, York ..	Full.
Walham	brown	5	by Newminster, out of Extremet, by Sweet	started 11, won 6	won the Derby	—	—	Palfr's Yard Farm, ..	10 gr., h. b. 5 gr.
Warlock	roan	17	by Birdcatcher, out of Elphine, by Emillus ..	started 19, won 8	won St. Leger	untried.	—	Walham	15 gr., h. b. 3 gr.
Warrior	grey	9	by King Tom, out of Wood Nymph, by Long ..	started 50, won 13	won £300 at Newmarket ..	—	—	Boston	10 gr., h. b. 3 gr.
Weather Guide	bay	8	by Weatherbit, out of Fintate, by Melbourne ..	never appeared ..	—	—	—	Mr. Oakes	15 gr., h. b. 3 gr.
Welcome	bay	11	by Faziolette, out of Auld Acquaintance, by ..	started 33, won 4	won Office-room Stakes, ..	untried.	—	Sheffield Lane Paddocks ..	10 gr., h. b. 3 gr.
Westwick	bay	7	by Stockwell, out of Moverina, by Touchstone ..	started 23, won 8	won £200 at Doncaster ..	—	—	Mr. Smith	10 gr., h. b. 3 gr.
Whitby	brown	7	by Barton, out of Julia, by Lanceslot	started 19, won 6	won £200 (h) at Epsom	untried.	—	Mr. Pearson	10 gr.
Wild Dayrell	brown	16	by Ion, out of Ellen Middleton, by Bay Mid ..	started 26, won 16	won the Derby	93	Wild Oats	houses, York	7 gr., h. b. 3 gr.
Windham	brown	9	by Windhound, out of Flight, by Alarm	started 38, won 16	won £270 (h) at York ..	—	—	Chatterick	10 gr., h. b. 5 gr.
Wingrave	bay	11	by King Tom, out of Incurable, by The Cure ..	started 29, won 13	won Woodcote Stakes ..	1	—	Calton, Hungerford ..	18 gr., h. b. 5 gr.
Yorkminster	brown	11	by Newminster, out of The Bee, by Gladiator ..	started 16, won 5	won £163 at Heath	1	—	Mr. Stud groom	5 gr., h. b. 3 gr.
Y. Birdcatcher (k. Cunnle Fellow and Villers)	chestnut	17	by I. Birdcatcher, out of a Waverly mare	—	—	—	—	Mr. Wright	10 gr.
Y. Dutchman (late Gen. Havelock)	—	18	by The Flying Dutchman, out of Wish, by ..	never appeared ..	—	4	Honesty	Croft, Darlington	18 gr., h. b. 3 gr.
Young Melbourne	brown	14	by Melbourne, out of Clarissa, by Pantalo ..	started 1	—	48	General Peel	Hampton Court	50 gr.
Y. Newminster ..	bay	5	by Newminster, out of Diomedea, by Weather ..	never appeared ..	—	—	—	Cowden, Hestfield, ..	10 gr., h. b. 3 gr.

The Groom's Fee, if not included, varies from a Guinea to Half-a-Crown.

SALE OF MR. HODGKINSON'S SHORTHORNS AT MORTON, RETFORD.

BY MR. JOHN THORNTON.

This herd has been selected and bred during the last ten years from stock bred by the late Mr. John Hall, Kiveton Park; Mr. John Armstrong, Palterton; Mr. George Bland, Coleby, and other breeders. Among them were some animals in direct descent from Lord Spencer's noted herd at Wiseton, including two specimens of the No. 54 of Lady Sarah family. The bulls that have been in use at Morton Grange have been bred chiefly from the Wiseton herd, combined with the blood of Messrs. Bates and Booth, viz.: Majestic (24510), by Mr. Booth's Lord of the Hills, from a daughter of Zeal, bred at Wiseton; and Duke of Nottingham (25992), by Mr. Bolden's Grand Duke 6th, from a descendant of Dimity by Zenith.

COWS AND HEIFERS.

Fairy, white, calved January 2, 1860, by Strongbow (15350), dam Firefly by Will Watch (12307)—£16 16s.

Yorkshire Belle, roan, calved January 31, 1861, by Hospitality (16287), dam Yorkshire Lass by Red Duke (15136)—£31 10s.

Carnation, roan, calved February 17, 1862, by Kirkman (16345), dam Crocus by Young Champion (12574)—£35 14s.

Grace Darling, roan, calved September 13, 1862, by Othello (20446), dam Grantham by Snowdrop (20861)—£26 5s.

Aconite, red, calved March 28, 1863, by Victor (21025), dam Acacia 10th by Lord Raglan (14849)—Mr. Charles Hodgkinson, £29 8s.

Fay, roan, calved January 21, 1864, by Lupus (20244), dam Fairy by Strongbow (15350)—£40 19s.

Emily, red and white, calved May 11, 1864, by Knight Errant (18154), dam Emmeline by Magna Charta (16486)—£27 6s.

Amelia 9th, red and white, calved in May, 1864, by Lucky Lad (18291), dam Amelia 2nd by Frederick (11489)—£32 11s.

Julia, red, calved October 28, 1864, by Lupus (20244), dam White Stockings 2nd by War Eagle (15483), a beauty—£47 5s.

Queen of the North, white, calved March 15, 1865, by Frederickburg (19784), dam Northern Belle by Highthorn (13028)—Mr. Longstaff, £37 6s.

Fairy Queen, roan, calved December 8, 1865, by Lupus (20244), dam Fairy by Strongbow (15350)—Mr. Greenwood, £42.

Forest Fay, roan, calved February 9, 1866, by Duke of Cumberland (21585), dam Fay by Lupus (20244)—Mr. Ellis, £30 9s.

April, roan, calved April 20, 1866, by Grand Duke 6th (19876), dam Apple Pie by Victor (21025)—Mr. Edwin Hodgkinson, £26 5s.

Lady Grace, red and white, calved May 15, 1866, by Frederickburg (19784), dam Grace Darling by Othello (20446)—£32 1s.

Susan, red and white, calved January 17, 1867, by Victor Royal, dam Sarah Ann by Victor (19058)—Mr. Wilkinson, £29 8s.

Minnie, roan, calved March 29, 1867, by Duke of Cumberland (21585), dam Clara by Strongbow (15350)—Mr. Wells, £35 14s.

Alice, roan, calved April 1, 1867, by Duke of Cumberland (21585), dam Fay by Lupus (20244)—Mr. Ramsden, £22 1s.

Judith, red, calved April 26, 1867, by Duke of Cumberland (21585), dam Julia by Lupus (20244)—Mr. Brooksbank, £30 9s.

Emily Mary, red and white, calved August 17, 1867, by Grand Duke 6th (19876), dam Emily by Knight Errant (18154)—Mr. Tallent, £21.

Fanny, roan, calved January 18, 1868, by Duke of Cumberland (21585), dam Lucy by Watchman (17316)—Mr. Copeland, £27 6s.

Star of the Evening, roan, calved February 7, 1868, by Victor Royal, dam Sarah Ann by Victor (19058)—£38 17s.

Annie, red and white, calved February 21, 1868, by Duke of Cumberland (21585), dam Fay by Lupus (20244)—Mr. Brooksbank, £28 7s.

Nellie, red and white, calved February 21, 1868, by Duke

of Cumberland (21585), dam Fay by Lupus (20244)—Mr. Brooksbank, £28 7s.

Bonnie Katie, roan, calved August 9, 1868, by Majestic (24510), dam Grace Darling by Othello (20446)—£18 7s.

Clara Morton, roan, calved November 12, 1868, by Red Comyn, dam Clara Carlisle by Duke of Cumberland (21585)—Mr. Foster, £18 18s.

Morton Duchess, roan, calved November 16, 1868, by Majestic (24510), dam April by Grand Duke 6th (19876)—Mr. Ellis, £17 17s.

Morton Fay, roan, calved January 6, 1869, by Majestic (24510), dam Forest Fay by Duke of Cumberland (21585)—Mr. Brown, Lincoln, £23 2s.

Cherry, roan, calved January 29, 1869, by Majestic (24510), dam Carnation by Kirkman (16345)—Mr. Brown, £25 14s.

Chance, white, calved April 8th 1869, by Victory (page 23), dam Cowalip by Victor Royal (page 23)—Mr. Copeland, £23 2s.

Housewife, red, calved May 13, 1869, by Duke of Nottingham (25992), dam Hostess by Lupus (20244)—Mr. Ellis, £17 17s.

Forest Nymph, roan, calved February 24, 1870, by Duke of Nottingham (25992), dam Fairy by Strongbow (15350)—Mr. Ramsden, £6 6s.

Forest Fairy, red, calved June 1, 1869, by Duke of Nottingham (25992), dam Fairy Queen by Lupus (20244)—Mr. Copeland, £19 19s.

Morton Sprite, roan, calved June 1, 1869, by Duke of Nottingham (25992), dam Fay by Lupus (20244)—Mr. Radford, £18 18s.

Juliana, red, calved October 28, 1862, by Duke of Nottingham (25992), dam Judith by Duke of Cumberland (21585)—Mr. G. Sanday, £13 13s.

April Queen, red, calved December 6, 1869, by Duke of Nottingham (25992), dam April by Grand Duke 6th (19876)—£29 9s.

Queen of Denmark, red and white, calved May 15, 1869, by Duke of Nottingham (25992), dam Queen of the North by Frederickburg (19784)—Mr. Wortley, £18 18s.

BULLS.

Prince Christian (24799), red, calved May 25, 1866, by Archduke (19239), dam Catalina by Bernard (15646)—Mr. Middleton, £35 14s.

Duke of Nottingham (25992), red, calved July 28, 1867, by Grand Duke 6th (19876), dam Aconite by Victor (21025)—Mr. Tallents, £31 10s.

Duke of Morton (25920), roan, calved November 3, 1868, by Majestic (24510), dam Aconite by Victor (21025)—Mr. Brown, £70 7s.

Jupiter, red, calved May 31, 1869, by Duke of Nottingham (25992), dam Julia by Lupus (20244)—Mr. Barker, £12 12s.

Darling Duke, roan, calved November 26, 1869, by Duke of Nottingham (25992), dam Grace Darling by Othello (20446)—Mr. Brooksbank, £22 2s.

Duke of Carlisle, red, calved December 7, 1869, by Duke of Nottingham (25992), dam Clara Carlisle by Duke of Cumberland (21585)—Mr. Beever, £10 10s.

Bridgroom, roan, calved January 17, 1870, by The Beau (27610), dam Aconite by Victor (21025)—Mr. Sampsy, £21.

Gracious Duke, red, calved February 4, 1870, by Duke of Nottingham (25992), dam Lady Grace by Frederickburg (19784)—Mr. Radford, £6 6s.

Duke of the Pail, red, calved February 13, 1870, by Duke of Nottingham (25992), dam Carnation by Kirkman (16345)—Mr. Beever, £11 11s.

Thirty-eight cows realized an average of £25 15s., and a total of £977 11s., and nine bulls an average of £24 12s. 4d., making £221 11s. The total proceeds were £1,199 2s. for 47 animals.

LONG-WOOLLED SHEEP—30 ram hogs were then sold, bred for many years from the flocks of Messrs. Burgess, Stone, and Sanday, and lately from Messrs. C. Clarke, Marshall, and Johnson.

CAPTAIN OLIVER'S SHORTHORN SALE AT SHOLEBROKE, NORTHAMPTON.

By MR. J. THORNTON, ON APRIL 13TH.

The farm attached to Sholebroke Lodge until recently formed part of the ancient forest of Whittlebury, some portion of the premises having been the offices of the forester. Nature has done but little for it; and a more barren or uninviting pasture we have seldom seen. If Shorthorns can flourish here, no part of England need be without them. A goodly array of breeders mustered at Sholebroke on Wednesday last to witness the dispersion of the well-known herd, all being offered with the exception of the Grand and Cherry Dukes and Duchesses, Lady of the Lake of Foggathorpe descent, and four heifer calves, which are retained as the foundation of another herd. The animals were in nice trim, not in any way pampered—a state of things alike satisfactory to buyer and seller. The greatest competition was excited for Lalage 4th, of Bates' Olive Leaf tribe—a very handsome cow, of good colour, but short in her quarters—when Mr. S. E. Bolden, of Grand Duchess fame, once more appeared on the Shorthorn scene, and claimed her at 450 guineas. This event caused great excitement among the "locals," who, no doubt, thought she might reach 40 or 50 guineas; their hearty cheers, however, testified the delight they felt, that their popular neighbour had secured so great a price for one of his stock. Mr. Bolden also purchased Bracelet the 8th, 9th, and 10th at 130, 100, and 190 guineas. It was rumoured around the ring that Mr. Bolden was the adviser of one of our large railway contractors, into whose hands these animals would eventually go. Lords Fitzhardinge and Skelmersdale were also present, the former, after spirited biddings, securing two of the famous Wild Eyes tribe at 170 and 140 guineas; while Lord Skelmersdale confined his attention to The Charnier tribe, of Milcote renova. Earl Fitzwilliam, Sir Tatton Sykes, and Sir Curtis Lampson, with the Hon. C. W. Fitzwilliam were also among the foremost purchasers.

A luncheon was served to about 350 in a tent near to the ring and presided over by Colonel Kingscote, who in a few well-timed sentences gave the usual toasts. The company then adjourned to the ring over which Mr. Thornton presided, and it is only right to add, conducted the business in a very efficient and becoming manner. We subjoin the "official" history of the herd: The foundation was first established at Stockwood Park and Milcote sales in 1860; the Orange tribe came from the former, and the Sweethearts, Frills, and Queens, from the latter; the Adelina tribe following them from Panton. The next year Cowslip 5th and Lalage were bought at Mr. Jonathan Peel's sale; both these animals are full of Kirklevington blood, the latter being in direct descent from the Olive Leaves or Barringtons, formerly in Mr. Bates' possession. Romulus Butterfly (18741) was then purchased privately from Col. Towneley; and in 1862 the Mason or V tribe came from Mr. Surtees, who obtained it from Mr. S. Wiley, and he purchased No. 51 at the great Chilton sale. The same year Cherry Duchess 9th and Grand Duke 7th (18977) were added to the herd. This bull was bred by Mr. Bolden, by Grand Duke 3rd from Grand Duchess 4th, and is own brother to the dam of Duke of Devonshire's 600-guinea Grand Duke 10th (21848). At the close of 1862 Wiley Witch was bought at Mr. Marjoribanks' sale at Bushey Grove. The Bracelets, with two crosses, Grand Duke and Seventh Duke of York, were originally at Castle Howard and Holker Hall, but came from Mr. Graham of Yardley, in company with Lady Wild Eyes 2nd, granddaughter of Wild Eyes 27th, bred by Mr. Bates. The most important additions to the herd were made in 1867, when Grand Duchesses the 17th and 18th were bought at Preston Hall for 1,560 guineas.

COWS AND HEIFERS.

Viscountess, red, calved January 23, 1859, by Duke of Argyll (11375), out of Baroness by Master Goldsmidt (13315).—Earl Fitzwilliam, 43 gs.
Darlington 9th, roan, calved July 7, 1859, by Marmaduke (14897), out of Darlington 8th by Fourth Duke of Oxford (11387).—Mr. A. J. Robarts, 46 gs.
Bracelet 2nd, white, calved March 20, 1862, by Seventh Duke of York (17754), out of Bracelet by Second Duke of Bolton (12739).—Mr. J. Cole, 50 gs.

Willy Witch, red, calved May 25, 1862, by Royal Butterfly 5th (18758), out of Water Witch by Lord Scarborough* (14852).—Sir Tatton Sykes, 70 gs.
Queen Bee, roan, calved July 28, 1863, by Romulus Butterfly (18741), out of Queen Annie by Baron Warlaby (7813).—Mr. W. Amos, 31 gs.
Sonora, red and white, calved December 6, 1862, by Romulus Butterfly (18741), out of Sincerity by Mameluke (13299).—Lord Skelmersdale, 61 gs.
Duchess of Gloster 3rd, roan, calved May 23, 1863, by Earl of Oxford (18670), out of Duchess of Gloster by Harry of Gloster (14874).—Mr. J. W. Ellis, 40 gs.
Bracelet 3rd, roan, calved May 29, 1864, by Touchstone (20986), out of Bracelet 2nd by Seventh Duke of York (17754).—Lord Fitzhardinge, 47 gs.
Adelina, roan, calved July 2, 1864, by Grand Duke 7th (18977), out of Autumn Rose by Vanguard (10994).—Earl Fitzwilliam, 62 gs.
Lalage 4th, roan, calved December 27, 1864, by Grand Duke 7th (18977), out of Lalage by Prince Imperial (15095).—Mr. J. E. Bolden, 450 gs.
Filligree, roan, calved February 8, 1865, by Grand Duke 7th (18977), out of Festoon by Kirklevington 4th (14775).—Hon. Chas. Fitzwilliam, 115 gs.
Lady Wild Eyes 2nd, roan, calved March 30, 1865, by Touchstone (20986), out of Lady Wild Eyes by Weathercock (9815).—Lord Fitzhardinge, 170 gs.
Vanity, roan, calved May 16, 1865, by Grand Duke 7th (18977), out of Viscountess by Duke of Argyll (11375).—Mr. J. A. Mumford, 58 gs.
Satanella, red, calved June 30, 1865, by Grand Duke 7th (18977), out of Sonora by Romulus Butterfly (18741).—Lord Skelmersdale, 120 gs.
Cowslip, red and white, calved October 13, 1865, by Grand Duke 7th (18977), out of Cowslip 5th by Chieftain (10048).—Lord Fitzhardinge, 70 gs.
Lady Seraphina 2nd, roan, calved November 7, 1865, by Grand Duke 7th (18977), out of Seraphina 2nd by Sweet William (7571).—Mr. A. J. Robarts, 35 gs.
Orange Leaf, red and white, calved April 27, 1866, by Grand Duke 7th (18977), out of Orange Fruit by First Fruits (16048).—Mr. T. T. Drake, 40 gs.
Bracelet 4th (late Beauty), white, calved April 30, 1866, by Knightley (22051), out of Bracelet 3rd by Touchstone (20986).—Mr. J. K. Fowler, 57 gs.
Blarney, roan, calved February 2, 1867, by Grand Duke 7th (18977), out of Bella by Romulus Butterfly (18741).—Mr. H. H. Hammond, 36 gs.
Crescent, roan, calved July 6, 1866, by Grand Duke 7th (18977), out of Crinoline by Aaron Smith (12331).—Mr. J. White, 53 gs.
Folly, roan, calved March 9, 1867, by Cherry Grand Duke (23554), out of Filigree by Grand Duke 7th (18977).—Mr. G. Savill, 42 gs.
Bracelet 5th, roan, calved April 13, 1867, by Knightley (22051), out of Bracelet 3rd by Touchstone (20986).—Sir C. M. Lampson, 100 gs.
Bracelet 6th, white, calved May 4, 1867, by Knightley (22051), out of Bracelet 2nd by 7th Duke of York (17754).—Mr. T. Trotter, 66 gs.
Vexation, roan, calved May 23, 1867, by Grand Duke 7th (18977), out of Viscountess by Duke of Argyll (11375).—Mr. S. S. Dickers, 61 gs.
Orangeade, roan, calved May 31, 1867, by Grand Duke 7th (18977), out of Orange Fruit by First Fruits (16048).—Mr. M. H. Williams, 56 gs.
Queen Caroline, roan, calved August 8, 1867, by Grand Duke 7th (18977), out of Queen Bee by Romulus Butterfly (18741).—Not offered.
Athena, roan, calved October 2, 1867, by Cherry Grand Duke (23554), out of Adelina by Grand Duke 7th (18907).—Mr. J. White, for Australia, 56 gs.
Lady Wild Eyes 3rd, roan, calved October 30, 1867, by Cherry

Grand Duke (23554), out of Lady Wild Eyes 2nd by Touchstone (20988)—Lord Fitzhardinge, 140 gs.

Wily Witch 2nd, roan, calved December 3, 1867, by Grand Duke 7th (19877), out of Wily Witch by Royal Butterfly 5th (18756)—Mr. H. J. Sheldon, 58 gs.

Vision, red, calved May 1, 1868, by Grand Duke 7th (19877), out of Viscountess by Duke of Argyll (11375)—Mr. M. H. Williams, 61 gs.

Orange Pipe, red and a little white, calved May 30, 1868, by Grand Duke 7th (19877), out of Orange Fruit by First Fruits (18048)—Mr. T. B. Locke, 71 gs.

Freedom, roan, calved June 4, 1868, by Grand Duke 7th (19877), out of Feetoon by Kirklevington 4th (14775)—Lord Fitzhardinge, 70 gs.

Bracelet 7th, red and a little white, calved August 30, 1868, by Grand Duke 7th (19887), out of Bracelet 3rd by Touchstone (20988)—Sir J. Rolt, 70 gs.

Bracelet 8th, roan, calved Sept. 24, 1868, by Cherry Grand Duke (23554) out of Bracelet 2nd by 7th Duke of York (17754)—Mr. S. E. Bolden, 130 gs.

Alicia, white, calved Sept. 30, 1868, by Grand Duke 7th, (19877) out of Adelinea by Grand Duke 7th (19877)—Earl Fitzwilliam, 56 gs.

Duchess of Gloucester 4th, white, calved November 3, 1868, by Grand Duke 7th (19877), out of Duchess of Gloucester, 3rd by Earl of Oxford (19870)—Mr. H. H. Hammond, 32 gs.

Wily Witch 3rd, red and a little white, calved December 23, 1868, by Grand Duke 7th (19877), out of Wily Witch by Royal Butterfly 5th (18756)—Mr. P. Brown, 50 gs.

Queen Bess, white, calved July 13, 1869, by Grand Duke 7th (19877) out of Queen Bee by Romulus Butterfly (18741)—Mr. H. H. Hammond, 27 gs.

Orange Peel, red, calved August 25, 1869, by Cherry Grand Duke 2nd (25758), out of Orangeade by Grand Duke 7th (19877)—Mr. C. C. Dormer, 26 gs.

Bashful, red, calved September 4, 1869, by Cherry Grand Duke 2nd (25758), out of Blarney by Grand Duke 7th (19877)—Mr. W. Wells, M.P., 29 gs.

Bracelet 9th, roan, calved September 30th, 1869, by Grand Duke 7th (19877), out of Bracelet 2nd, by 7th Duke of York (17754)—Mr. S. E. Bolden, 100 gs.

Bracelet 10th, white, calved September 30th, 1869, by Grand Duke 7th (19877), out of Bracelet 2nd by Seventh Duke of York (17754)—Mr. S. E. Bolden, 120 gs.

Cascade, red and white, calved October 25th, 1869, by Grand Duke 7th (19877), out of Crescent by Grand Duke 7th (19877)—Mr. J. Beasley, 30 gs.

Bracelet 11th, red and white, calved January 23rd, 1870, by Grand Duke 7th (19877), out of Bracelet 3rd by Touchstone (20988)—Mr. J. Clayden, 45 gs.

Fretwork, roan, calved March 13, 1870, by Cherry Grand Duke 2nd (25758), out of Filigree by Grand Duke 7th (19877)—Lord Fitzhardinge, 36 gs.

Orange Tree, red, calved April 5, 1870, by Cherry Grand Duke 2nd (25758), out of Orange Leaf by Grand Duke 7th (19877)—Mr. F. Sartoris, 13 gs.

BULLS.

Lord of the Forest (26704), white, calved June 26, 1868, by Grand Duke 7th (19877), out of Lady of the Lake by 2nd Duke of Bolton (12739)—Reserved, 150 gs.

Beadsman (25619), white and a little roan, calved August 31, 1868, by Cherry Butterfly (23550), out of Bracelet 4th by Knightley (22051)—Mr. J. W. Ellis, 86 gs.

Candidate, roan, calved November 29, 1868, by Second Duke of Claro (21576), out of Duchess of Cambridge 2nd by 2nd Duke of Cambridge (12743)—Mr. G. E. Frere, 57 gs.

Chorister, white, calved December 3, 1868, by Second Duke of Claro (21576), out of Duchess of Cambridge 4th by 3rd Grand Duke (16182)—Mr. J. Pretty, 51 gs.

Duke of Liverpool, roan, calved May 30, 1869, by Second Duke of Claro (21576), out of Lalage 4th by Grand Duke 7th (19877)—Mr. C. Barnard, 86 gs.

Fortanio, red, calved August 17, 1869, by Cherry Butterfly (23550), out of Folly by Cherry Grand Duke (23554)—Mr. T. B. Locke, 51 gs.

Adonis, roan, calved September 6, 1869, by Grand Duke 7th (19877), out of Adelinea by Grand Duke 7th (19877)—Mr. C. Higgins, 23 gs.

Vespaian, red, calved October 2, 1869, by Cherry Grand

Duke 2nd (25758), out of Vexation by Grand Duke 7th (19877)—Mr. G. Underwood, 38 gs.

Tortworth, roan, calved October 11, 1869, by Grand Duke 7th (19877), out of Duchess of Gloster 3rd by Earl of Oxford (19870)—Col. Fitzroy, 30 gs.

Sholebroke, red and white, calved Dec. 14, 1869, by Sam of Oxford (25084), out of Lady Seraphina 2nd by Grand Duke 7th (19877)—Mr. W. Linnell, 15 gs.

Darrington, red and white, calved Dec. 23, 1869, by Grand Duke 11th (21849), out of Darlington 9th by Marmaduke (14897)—Mr. S. Ayers, 27 gs.

Songster, red with a little white, calved April 4, 1870, by Cherry Grand Duke 2nd (25758), out of Sonora by Romulus Butterfly (18741)—Lord Southampton, 27 gs.

SUMMARY.

	£	s.	d.
45 Cows averaged £73 18s. 10d.	3,327	9	0
11 Bulls „ £44 0s. 1d.	484	1	0

Total.....£3,811 10 0

56 head averaged.....	£68	1s.	3d.
11 Bracelets averaged	£81	4s.	7d.
5 Fills „	£65	18s.	9d.

THE COOLLATTIN SHORTHORN SALE.

The annual sale of Earl Fitzwilliam's yearling bulls took place at Coollattin, co. Wicklow; Messrs. Ganly, auctioneers. The following is a list of the animals, purchasers, and prices:

Prince Consort (27135), calved Nov. 22, 1868.—Mr. Leslie, Saddle, Ross-shire, £35 14s.

Royal Oak (27371), calved Dec. 5, 1868.—Mr. Magenis, Roscommon, £48 6s.

Jolly Tar (26475), calved Dec. 8, 1868.—Mr. Ellis, co. Wicklow, £39 7s. 6d.

Lord of the Isles (26706), calved Dec. 14, 1868.—Mr. Glancy, Roscommon, £42.

Prince Oscar (27191), calved Dec. 27, 1868.—Mr. Hornidge, co. Wicklow, £32 11s.

Pleisades, calved Feb. 2, 1869.—I. T. Hamilton, M.P., £29 8s.

Vulcan, calved Feb. 4, 1869.—Mr. Glancy, £43 1s.

Julian, calved Feb. 25, 1869.—Mr. Keogh, £22 1s.

Ploughboy, calved Feb. 25, 1869.—Mr. Brown, co. Carlow, £18 7s. 6d.

Islander, calved March 5, 1869.—Mr. Trotter, Garguslon, Ross-shire, £33 1s. 6d.

Ich Dien, calved March 5, 1869.—Hon. Mr. Proby, £23 17s. 6d.

John O'Gaunt, calved March 7, 1869.—Mr. Hanlon, co. Carlow, £26 5s.

Peveril of the Peak, calved March 12, 1869.—Mr. Courtney, co. Wicklow, £22 11s. 6d.

Safeguard, calved May 10, 1869.—Mr. Montfort, co. Wicklow, £15 15s.

They were all by Lord Stanley (24466).
Average, £31 4s. 9d.

NORTHAMPTONSHIRE AGRICULTURAL SOCIETY.—The show of entire cart horses in connection with the above society took place at Northampton, with the following result: Best stallion for agricultural purposes, the property of or hired by the exhibitor, first prize £10, Mr. John Manning, Orlingbury—chestnut colt, bred by Mr. Stokes, sire Old Champion, 8 years old; second of £5, Mr. John Roach, Gretton—England's Glory, bred by Mr. B. Shaw, Swineshead, sire Mr. Taylor's England's Glory, sire of dam Old Lincoln, 7 years old. The judges were Mr. Thomas Woods, Wychley Warren; Mr. William Treasler, Moulton; and Mr. F. J. Berry Stanion.

THE SECOND-BEST CHRISTMAS COW.—At the last Birmingham Show we spoke to Messrs. Mitchell's Blue Belle as "a very sweet, almost dainty creature," and as one, "what with her pretty lady-like head, her nice long low frame and light bone, that would seem yet more an ornament for the herd than a victim to the shambles;" and Blue Belle has just dropped a very pretty heifer-calf.

SALE OF MR. W. HEWER'S CATTLE AND SHEEP.

This sale took place at Northleach, on which occasion, as might be expected from his reputation as a breeder of cattle and Cotswolds sheep, there was a very large attendance of farmers and dealers from the adjoining district, as well as others from more distant counties. Mr. Hewer spared no expense in obtaining the best blood, and he had succeeded in collecting a herd which, in point of form and quality, contained perhaps a greater number of really good animals than could be found in this part of the country. The oxen and steers were very fresh having had neither cake nor corn; amongst the three-year-old steers were some extremely choice beasts well calculated to make prize animals.

The sale commenced shortly after one o'clock, Mr. Villar, of Cheltenham, officiating as auctioneer. The sheep were first brought to the hammer. The ewe tegs, which were sold in lots of five each, were speedily knocked down at prices varying from 38s. to 168s. per head, the principal buyers being Mr. Swanwick, of the Royal Agricultural College, Cirencester; Mr. Canning, whose purchases are intended for New Zealand; Mr. Easton, from Scotland; Mr. Phillips, of Dorn; Mr. Tucker, of Poundborough; Mr. Hodges, of Milcote, Stratford-on-Avon; Mr. Smith, of Bibury; Mr. Fletcher, of Shipton; Mr. W. Harding, of Northleach; Mr. Matthews, of Thenford Farm, Newton; Mr. Deacon, of Dix; Mr. Rayer, of Withington; Mr. Lord, of Brize Norton; Mr. Wheeler, of Elkstone; Mr. Porter, of Cola St. Aldwyns; Mr. Humphries, of Sevenhampton; and Mr. Clare, of Bampton.

The ram tegs, of which there were 30 lots, realised prices varying from 5s. each the lowest to 9½s. the highest, several other lots fetching 7½s., 8s., and 8½s. each. Amongst the buyers were Mr. Easton, from Scotland, and Mr. Little, of Norecutt, purchasers of the highest-priced animals; Mr. Godfrey, Rissington; Mr. Pedley, Kilkeny Farm; Mr. James Taylor, Long Compton; Mr. Swanswick, of the Royal Agricultural College, Cirencester; Mr. Hiatt, Snowhill; Mr. Frampton, Uffington; Mr. C. Newman, Long Furlong Farm; Mr. Frampton, Fernham, Beds; Mr. Rivette, Rendcombe Park; Mr. Stevens, Farmington; and Messrs. Hands, Harwood, and Taylor.

A well-bred Hereford cow, Bloomer, fetched £25 10s., the buyer being Mr. Ailday, of Chipping-Norton; and her calf £10 10s., the purchaser being Mr. George Hewer, who is taking to the farm. A Hereford cow, Young Bloomer, was bought by Mr. Stilgoe, of Adderbury, for £27 10s.; Pretty Maid, and Cherry, fetched £29 each; Blossom, £22 10s.; and Snowdrop, £38. The working oxen realised high prices, several of them ranging up to £37 a-piece, the lowest being £28. Amongst the buyers, besides those already mentioned, were Mr. Barton, Cola St. Dennis; Mr. Peachey, Coverley; Mr. Hulbert, North Cerney; Mr. Austin, Wroughton, near Swindon; Mr. H. Cuss, Cricklade; Mr. Stranks; Mr. Harding, Northleach; Mr. T. Palmer, Nailsworth, &c.

The steers and heifers fetched good prices, the highest being £42, bought by Mr. Harding, of Northleach, and others were purchased by Mr. Leonard, Dursley (£37); Mr. A. Pike, Tewkesbury; Mr. Waller, Farmington; Mr. Tanner, Welford, Berks; Mr. T. Porter, Baunton; Mr. Slatter, Stratton; and Mr. Hulbert, Cerney.

EXPORTATION OF BREEDING STOCK TO AMERICA.—A shipment of two-year-old and yearling Shorthorn heifers left Liverpool by the "Denmark" for Mr. James O. Sheldon, Geneva, New York. These animals were purchased in this country and shipped by Mr. John Thornton, as breeding stock for the celebrated Dutchess bulls in Mr. Sheldon's herd. Mr. Cheney's herd at Gaddesby supplied two heifers—Bouquet 3rd, a roan of the Foggathorpe tribe, and of the same family as Col. Towneley's prize heifer Baron Oxford's Beauty, and May Lass 2nd, roan, descended from Mr. Fawkes' Millicent tribe; both these heifers were by General Napier a bull of Bates Princess blood. Lady Worcester 4th, roan, a Bates' Wild Eyes heifer, was selected from Mr. John Harvard's herd at Winterfold, and Sidonia 2nd, a red of Mr. Bowly's Gazelle family, from Mr.

Isaac Downing. Two heifers were bought of Mr. Hugh Aylmer—Guava 4th, with some Booth blood, and Britannia 18th, red, descended from Mason's No. 6 Chilton sale. A Booth heifer, Rosary Charm, was purchased from Mr. Torr at Aylesby, and Rosemary, descended from Mr. Cowling's Kitt stock, came from Teesdale. These animals had a very good voyage, and were landed safely at Mr. Sheldon's farm at Geneva, New York State, on the 10th of March. As the United States Government restrict the importation of live stock, they were accompanied with certificates of health from the breeders and magistrates of the district. Messrs. Walcott and Campbell, who recently purchased Mr. Booth's cow, Bride of the Vale, for 1,000 guineas, are in treaty for another shipment of Shorthorns, including Colonel Towneley's heifer, Baron Oxford's Beauty, and other well-known animals, and a small lot of heifers and bulls will shortly be sent to Colorado.

THE CONTAGIOUS DISEASES (ANIMALS) ACT TO MARCH 5, 1870.

Mr. Sewell Read has asked for a return of stock diseases, which is not yet printed. He desired to have a return of the number of cases reported to the Veterinary Department of the Privy Council, but was informed he could only have the number of infected farms or places, and in the case of *pleuro-pneumonia* that some local authorities did not get into order till the Michaelmas quarter sessions were over (for there was no power, in fact, to put the local authority in motion till the sessions met), but after they were made to keep a register of all cases of disease for each inspector to weekly report to the Privy Council. It seems so very odd that no record of the number of cases thus reported is kept by the Veterinary Department. Possibly they consider none but pleuro are of sufficient importance to render a record necessary; but then why trouble the local authorities and inspectors to make these weekly returns?

A return of the number of farms and other places in Great Britain infected with foot-and-mouth, pleuro-pneumonia, sheep scab, and glanders reported to the Privy Council:

Foot-and-mouth...	16,140	Scab	1,69637
Pleuro-pneumonia	911	Glanders	

There are in the 911 outbreaks of pleuro 2,763 cases reported—no record seems to be kept of the number of cases of foot-and-mouth, sheep scab, and glanders. Foot-and-mouth has prevailed in all counties, but there are only five infected places reported for Cornwall: the West Riding of Yorkshire seems to have suffered most, and then comes Suffolk. There is no case of pleuro in Cornwall, Dorset, Gloucester, Hereford, Monmouth, Westmoreland, or the East Riding of Yorkshire; and the Welsh counties are free from this deadly disease, save Denbigh and Flint. Cornwall furnishes 261 farms on which scab prevails, Devon 166, Monmouth 124, Somerset 103, Cumberland 89, Leicester 87, and Northampton 78. Northumberland, Westmoreland, East Riding, Cambridge, and Berks are clear.

PLOUGHING AGAINST TIME: A CHALLENGE.—A ploughing-match of a novel kind has recently taken place at Bainingale, Shropshire, and it was certainly an extraordinary performance. Mr. Southall, a farmer, undertook, on the impulse of a bet, to plough one acre of land, in a workmanlike manner, within three hours, using a single plough, to which four horses were attached, working two abreast and driven by a boy. The field selected was a wheat-stubble, and the crop had been cut with a reaping-machine. The plough has been many years in Mr. Southall's possession. It was made by his own blacksmith, according to his own plan, and under his instructions. The work was completed in the short space of two hours and sixteen minutes, to the entire satisfaction of the judges, and amidst the applause of a large concourse of agriculturists who had assembled to witness it. Mr. Southall is open to challenge any plough, whatever its construction may be for accuracy of work and ease of draught; and, according to our correspondent, Messrs. Howard, Messrs. Ransome and Sims, and other celebrated implement-makers must look to their laurels.

THE GAME-LAWS BILL.

Draft of the bill to amend and to assimilate in certain respects the laws of England and Scotland relating to game, as introduced by the Lord Advocate:—

Whereas by the law of England the tenant in the possession of land for the time has the sole right of killing and taking the game thereon, unless right be expressly reserved by, or granted to, the landlord or any other person; and it is expedient to assimilate in this respect the law of Scotland to England, and also to amend and assimilate in certain other respects the laws of England and Scotland relative to game, and to make certain provisions for the protection of tenant-farmers against injury arising to them in consequence of any undue increase of hares and rabbits, when they are prohibited by the landlords from killing and taking these animals: Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same as follows:—

1. This Act may be cited for all purposes as, "The Game-Laws Amendment Act, 1870."

2. For the purposes of this Act, the words and terms hereinafter mentioned shall have and include the meanings hereinafter assigned to them, that is to say:—

The term "lessor" shall mean the grantor of any lease of land for a year or a longer term, and also the person for the time in the right and subject to the obligations of the grantor with respect to such lease.

The term "lessee" shall mean the grantee of any lease of land for a year or longer term, and also the person for the time in the right and subject to the obligations of the grantee with respect to such lease.

The term "game" shall be deemed to include hares, pheasants, partridges, grouse, heath or moor game, black game, and bustards.

The term "Martinmas" shall mean the eleventh of November.

The singular shall include the plural, and *vice-versa*.

3. The Act of the Scottish Parliament, 1621, chap. 31, "anent hunting and hawking," is hereby repealed.

4. In all cases where any person shall occupy any land in Scotland as tenant, under any lease or agreement made subsequently to the passing of this Act, such person shall have the sole right of killing and taking the game and rabbits upon such land, unless such right shall have been expressly reserved by the landlord, or granted to him by the tenant, or except in so far as such rights shall have been so reserved or granted.

5. No lessee in the occupation of any land in England shall be liable to prosecution, or to any penalty or punishment under the Act 1st and 2nd William IV., chap. 32, intituled "An Act to amend the laws in England relating to Game," or under any other Act or Acts of Parliament, for pursuing, killing, or taking hares or rabbits on such land, or for giving permission to any other person so to do; but the permission of a lessee without right shall not avail any person to whom it may be given: provided always that nothing herein contained shall protect a lessee against an action for breach of any contract whereby he is restrained from pursuing, killing, or taking hares or rabbits on the land of which he is lessee.

6. No lessee in the occupation of any land in Scotland shall be liable to prosecution, or to any penalty or punishment under any Act or Acts of Parliament, for pursuing, killing, or taking hares or rabbits on such land: provided always that nothing herein contained shall protect a lessee against an action for breach of any contract whereby he is restrained from pursuing, killing, or taking hares or rabbits on the land of which he is lessee.

7. No injunction shall be granted in England, and no interdiction shall be granted in Scotland, upon, or in order to pro-

test or enforce any contract whereby a lessee is restrained from pursuing, killing, or taking hares or rabbits on the land of which he is lessee; but the lessor shall be left to his ordinary legal remedies other than injunction or interdiction upon such contract.

8. When the exclusive right of killing hares or rabbits has been reserved by, or granted to, the lessor, and he shall fail or omit to keep down the stock of these animals to such an extent as shall be fair and reasonable in justice to the lessee, who is prohibited from killing them, such lessor shall be liable in damages to the lessee for the loss, injury, and damage caused to him by such failure or omission: provided always that in judging of the extent to which it is fair and reasonable that such stock should be kept down, and also in assessing damages, regard shall be had to the character and cultivation of the land, the amount of the rent as compared with the real value, and the terms and conditions of the lease.

9. Any lessee who, by himself or others for whom he is responsible, hunts, kills, or takes game or rabbits contrary to the terms of his lease, or of his bargain with the lessor, shall be liable in damages for breach of contract, and the same may be recovered in the form and manner hereinafter provided.

10. Any lessor who, to the injury and damage of the lessee, fails to fulfil the obligation incumbent on him under clause 3 of this Act, shall be liable in damages as for breach of contract, and the same may be recovered in the form and manner hereinafter provided.

11. In England, damages to any amount not exceeding £50, for which liability is incurred under the provisions of this Act, may be sued for in the county court within the district of which the lands upon which the claim of damages has arisen, or any part thereof are situated, and the judge of such county court may remit to a man or men of skill to inspect the premises and report, and shall try and decide the case without a jury.

12. In England, when the damages claimed exceed £50, any action therefor shall be brought in one of the supreme courts of common law at Westminster.

13. In Scotland, damages to any amount not exceeding £50, for which liability is incurred under the provisions of this Act, may be recovered by action before the sheriff of the county in which the lands or any part thereof are situated; and such action may be raised and proceeded with in the form and according to the procedure observed in the Sheriff Small Debt Court, subject to the following provisions in cases where the amount sued for exceeds £3 6s. 8d., viz.:—

First, That counsel, agents, and procurators shall be entitled to appear for the parties in such actions.

Second, That the sheriff shall take and preserve a note of the pleas of parties, and any evidence that may be adduced.

Third, That the sheriff may remit to a man or men of skill to inspect the premises and report; and,

Fourth, That when the sum sued for exceeds £25, the sheriff's judgment shall be subject to appeal to the Court of Session.

14. In Scotland, when the damages claimed exceed £50, any action therefor shall be brought in the Court of Session.

15. Any action by a lessor against a lessee for damages of the nature hereinbefore provided for, shall be brought within three months of the date of the act or acts on account of which damages are claimed, and shall not hereafter be competent.

16. Any action by a lessee against a lessor for damages of the nature hereinbefore provided for, shall be brought not later than Martinmas of the year in which the injury was done, in respect of which the damages are claimed, and shall not thereafter be competent; and the year shall, for the purposes of this Act, be taken to run from Martinmas to Martinmas, and only one such action shall be competent in the same year to the lessee against the lessor of any farm.

17. Any written agreement between a lessor and lessee to refer to arbitration claims of damages which have arisen, or may thereafter arise between them, of the nature hereinbefore provided for, shall be valid and binding, although the arbiter

or arbiters may not be named; and if either party shall refuse or fail for ten days after written notice to name an arbiter or arbiters in pursuance of such agreement, the arbiter or arbiters named by the other shall be at liberty to proceed and to act as if he or they had been duly appointed by both parties.

18. A written decision by an arbiter or arbiters named by the parties, or by one of them, after the refusal or failure of the other as aforesaid, or by an arbiter or arbiters duly appointed under any such agreement as is contemplated in the preceding section, or by an oversman duly appointed under any such agreement, shall be valid and effectual in act of law, according to the true intent and meaning thereof, although it shall not be in the form of a formal award or decree arbitral, and it shall be no objection to the agreement to refer to the nomination of an arbiter or arbiters, that the same is not contained in a formal deed, provided it be in writing, admitted or proved to be genuine.

19. A lessee who is by contract or agreement with the lessor prohibited from killing hares or rabbits on the land let to him shall be at liberty before the term of Martinmas in any year to render to the lessor, his known factor or agent, an account of the damage caused to him in the year by the failure or omission of the lessor to keep down the stock of these animals, and to name an arbiter to whom he is willing to refer his claim against the lessor for such damage; and provided the amount claimed does not exceed £25, the lessor shall be bound within fourteen days of the receipt of such account and nomination to name an arbiter to act for him in regard thereto, and the arbiters named by the parties respectively shall be entitled to decide finally upon the lessee's claim, or if they cannot agree, to name an oversman or umpire, who shall be entitled finally to decide upon the same; and should the lessee fail to name an arbiter within the time hereby limited, the arbiter named by the lessee shall be entitled to decide upon the claim.

20. No proceedings under the preceding clause shall be void for want of form, and the arbiter or arbiters, umpire or oversman, having jurisdiction by virtue thereof, shall be at liberty to determine the course of procedure and the nature and extent of the inquiry which it is proper to make, and their decision or decisions shall be final, and although informal, may be enforced by action in act of law.

21. It shall not be competent to any lessee to have in respect of the same farm more than one such arbitration as aforesaid in any one year, and such arbitration shall preclude an action by him in the same year for damage caused by hares or rabbits upon such farm.

22. This Act shall come into operation from and after the first day of February, 1871.

ABERDEENSHIRE TENANT FARMERS AND THE GAME LAWS.

A largely attended meeting of tenant farmers and others in the Alford district of Aberdeenshire was held at Bridge of Alford to consider the Game-law Bills before Parliament.

Mr. WALKER (Bithnie) presided, and said he could not introduce the subject better than by reading a letter from their representative, Mr. M'Combie, M.P., who took great interest in the question, and unflinchingly represented the wishes of his brother farmers in this important matter. The letter stated that the member for West Aberdeenshire was very glad that the farmers of Alford were meeting in the matter, and would have been delighted to have been present but for important engagements in other parts of the country. He could have wished very much that Mr. Loch and Mr. M'Lagan had agreed to amalgamate their Game-law Bills, and not have divided public opinion about their merits. He was very glad that the Lord Advocate had promised to lay upon the table of the House of Commons a Government bill, and in consequence of this, Mr. Loch's bill had been postponed. A bill brought in by any private member would (Mr. M'Combie thought) have very little chance of being carried in opposition to a Government measure, which he hoped would deal in a satisfactory manner with this vexed question. If it were not a measure that they could accept, it would only increase agitation on the subject. A strong feeling was now arising in this country that the time for a compromise has passed, and that nothing short of entire abolition will be

accepted. His sympathies, he said, entirely went with this feeling, and he was glad many Scotch members were of a similar opinion. Nothing but bad health would prevent him from being in his place in the House of Commons when Mr. Taylor's bill or the others on this subject came up for discussion. Mr. Walker, after reading the letter, referred to the change which has recently come over the minds of farmers in respect to the public discussion of this question. What he proposed ten years ago—the public discussion of game-laws by agriculturists—was now extensively adopted. No one had made a greater change than their respected member, who, in 1860, was a zealous game protector, and in 1870 was prepared to abolish the law. His opinion was that, in order to have successful legislation, the old laws would require to be entirely repealed. Mr. M'Lagan's Bill—an honest measure—would have been satisfactory in 1860, but not now. Mr. Loch's bill would evidently perpetuate the laws. Many difficulties interfered to prevent the farmer benefiting by the proffered boon of conceding hares and rabbits. He was afraid the landlords' consent would be necessary to the killing of hares and rabbits as much after the passing of Mr. Loch's Bill as it was now. Mr. Loch's bill certainly promised compensation for ravages by game, but how could these damages be correctly ascertained? He condemned the clause in Mr. Loch's bill enabling the tenants to break contracts with proprietors. They had themselves to blame so long as they had a voice in making the laws of their country if they allowed their crops to be destroyed by game any longer. They should go in for entire abolition, and they would be supported by their brother farmers in Scotland as well as England, and also by inhabitants of towns.

Mr. BENTON (Crookmore) moved the following resolution: "That the Game-laws are injurious to the interests of agriculture, inasmuch as they give one class power to preserve and multiply to excess wild animals which feed upon and destroy the tenants' crops designed for the food of the people." He supported the resolution briefly. He said it was more a national question than one affecting merely proprietors and tenants. It would be generally admitted that Game-laws favoured one class at the expense of another.

Mr. FORBES (Newbrace) seconded the resolution, which was carried unanimously.

Mr. MITCHELL (Auchnagathel, Keig) moved: "That the present Game-laws are a national evil, inasmuch as they encourage poaching, are a fruitful source of lawlessness and crime, and greatly diminish the progress of agriculture." When one-third or one-half of their crops, he said, as the case might be, were destroyed by game, there was very little use of what remained, in consequence of frost. The damages, especially on grass fields, were incalculable. The Game-laws fostered poaching and crime, as well as much ill-feeling between landlord and tenant.

Mr. LAWMOND (Mosshead) seconded the resolution, which was carried with acclamation.

Mr. ANDERSON (Wellhouse) said it was very unpleasant for them to take up a position against their landlords. Aberdeenshire farmers had taken the lead in this matter, as shown by the result of the last two Parliamentary elections. Other Scotch counties had since followed their example, as had also several English constituencies. The preservation of farmers' crops was indirectly as much the landlords' interest as the tenants'. Aberdeenshire proprietors did themselves great credit by not only joining but leading the farmers in stamping out the rinderpest, and the farmers now regretted that the landlords did not join with them in stamping out the game pest. Farmers were not guilty of complaining, and were too keenly alive to their own interests to open their mouths against their landlords, and to come thus forward without a grievance. Let the rights of property be regarded as sacred upon the one side as the other. Were not their crops as much their property as the landlords' purses were theirs? Did they not waste their labour and capital in cultivating crops which were sacredly their own? Mr. Loch's bill was, he would say, calculated to be favourable to the Lowland and unfavourable to the Highland tenant; while it would be unfair to Lowland landlords, and beneficial to Highland landowners. If the Lowland landlord did not get hares and rabbits, he would be left with only a few partridges; while the Highland landlord would have his deer and grouse preserved. The result of this Bill would be free-trade in game in one part of the country,

and Protection in another. Nothing short of entire abolition would do. The rabbit warren was probably not so destructive as the deer forest. The rabbit in its mischievous powers was half-brother of the rat, and though the red-deer was the most noble of four-footed game, he was not destined to take the place of man. Deer forests had been created at the expense of evicting thousands of families from Highland glens, and he regarded the deer forest as the greatest blot on the Game-laws. Game watchers could no more prevent professional poachers from killing game than they could prevent notorious thieves from stealing. It had been said that the letting shootings and preserving game encouraged noblemen and gentlemen to live for some time in the north and spend money. It was only a few hotelkeepers and gamekeepers that benefited by this arrangement, and during the eight or nine months of the year during which the game was not shot, the farmers' crops suffered greatly. He maintained there was more need for the repeal of the Game-laws than of the Corn-laws. They had Liberal as well as Conservative proprietors in Parliament opposed to abolishing these laws. He was afraid the most dangerous opponent to abolition was the Liberal landlord, who gave the measure a sort of half-warm-hearted support to enable him to face his constituents. He feared there were lions thus in sheep-skins. Before they obtained their wishes in this matter, he thought it would be necessary for town and country inhabitants to form themselves into an Anti-Game-law League, which they should do. He concluded by moving the following resolution: "It is the opinion of this meeting that of the several Game-law Bills which may be introduced into Parliament, the only one which will remedy the evils complained of is that which proposes their entire abolition."

Mr. WALKER (Mill of Fawlis) seconded the resolution, which was carried unanimously.

Mr. REID (Upper Balfour) moved: "That a petition embodying the above resolutions should be sent to Parliament, through our representative, Mr. McCombie, with an urgent request that he use his influence in getting the prayer of the petition granted." He regarded Mr. Loch's bill as a mockery to the tenantry of Scotland.

Mr. ROSS (Corbanchory) seconded the motion, which was declared carried amid great cheering.

A vote of confidence was then passed unanimously in Mr. McCombie, M.P.; and a vote of thanks to the Chairman closed the meeting.

A petition in terms of the last resolution was numerously signed after the meeting terminated, which was, without exception, the most unanimous for total abolition that has yet been held among northern tenant-farmers.

THE GAME LAWS.

At a meeting of the East Suffolk Chamber of Agriculture at Ipswich, Mr. NEWSON GARRETT read a long paper on this subject, and concluded by moving the following resolutions, which were seconded by Colonel Sir R. A. S. ADAIR:

1. "That the present game laws are injurious to the best interests of landlords, tenant-farmers, and the country at large; and that their influence is demoralising to all classes."

2. "That they add greatly to the heavy rates, the payment of which is yearly becoming more irksome and distasteful to the whole community, and to the judicious reduction of which each Government in its turn professes to accord its most hearty approbation."

3. "That hares and rabbits ought to be excluded from the operations of the game laws; that their preservation, being incompatible with good farming, is contrary to the public good, and that therefore all contracts, having for their object the preservation of hares and rabbits, ought to be declared illegal."

4. "That the expenses of all prosecutions under game Acts ought to be defrayed by the persons concerned in the actions, and not by the county."

5. "That this Chamber of Agriculture is unanimous in hoping that the hon. Members for East Suffolk will use their influence both in the House of Commons and out of it, for the thorough investigation, and for the reform of these laws."

The meeting appeared by no means inclined to go altogether with Mr. Garrett, and Mr. E. DECK moved as an amendment,

"That the over preservation of ground game is injurious to the best interests of landlords, tenant farmers, and the country at large." Mr. GARROULD seconded Mr. DECK's resolution.

Mr. R. L. EVERETT proposed the adjournment of the debate, and deprecated taking any resolution upon a part of the question, which should be debated as a whole. Mr. W. KERSEY seconded the motion.

Mr. NEWSON GARRETT objected strongly to the amendment, and pressed for a division on the first resolution.

Mr. M. BIDDLE, who had succeeded Mr. Henniker-Major, M.P., as chairman, ruled that he must first put the amendment for the adjournment of the discussion which had been last moved, and said he should like to have more said about the remedy for the present state of things. He was sure Mr. Garrett's position would be no less strong for an adjournment.

Mr. GARRETT: I come here not to maintain Mr. Garrett's position, but I come here on the part of the farmers, and I protest against the adjournment of the discussion. I press for a decision now. (Cries of "Chair, chair," and "Order.")

The CHAIRMAN then put the amendment moved by Mr. Everett, which was carried by a large majority, and the meeting was declared adjourned for a fortnight.

Several members essayed to continue to address the meeting, but votes of thanks were passed to Mr. Garrett and the Chairman, and the hall was soon cleared.

THE GOVERNMENT GAME BILL.—The Bill is very different from any which has hitherto passed into law upon the subject of game. The clauses are few and very simple. But they indicate perhaps more clearly than any other measure which has been introduced by Government since the commencement of the Reformed Parliament in what direction public opinion is drifting. Not that the measure can be characterized as democratic. On the contrary, it is eminently moderate. But when compared with any previous Acts which have been passed on the subject of game there is a marked difference. And it is this—that, whereas in all former Acts almost without exception, the interest of the landlord has been paramount, in this Bill it is the interest of the tenant which is paramount. The object of the Bill is to assimilate the laws of England and Scotland relating to game. In Scotland it appears that game is not the property of the tenant. When he enters on a lease he has no more right to the game upon his farm than he has to the landlord's residence. In England it is otherwise. But, on the other hand, it appears that in England the farmer who has resigned his rights to the game may be treated as a poacher if he should take a head of game off his own farm. In Scotland he cannot be so treated. In these two particulars the Lord Advocate proposes to assimilate the laws of the two countries. Henceforth, if this Bill passes, game in Scotland is to be the property of the tenant. Henceforth the tenant in England may take what game he likes off his own farm, and he can be dealt with by a civil action only. It is obvious that both these alterations in the law will tend greatly to better the condition of the tenant. But these are the first steps only in this direction. No injunction or interdict is to be granted whereby the tenant can be restrained from killing all the hares and all the rabbits on his land if he be so minded. The landlord's only redress in such a case is a civil action for damages against the tenant. The latter may kill every four-footed animal on his land, and then leave the assessment for damages to a jury of his peers. This is an important weapon in the farmer's hands, and one which is well calculated to bring even the most exacting of game-preservers to reason. But the Lord Advocate proposes to go beyond this. In cases where the landlord reserves the right of killing hares and rabbits he is bound to keep down the stock of these animals within reasonable limits, under penalty of liability in damages to the tenant. And the reasonableness of the limits and the amount of the damages are to be judged of after due regard is paid to the character and cultivation of the land, the amount of the rent, and the conditions of the lease.—*The Saturday Review.*

THE GAME LAWS IN SCOTLAND.—The Haddington Farmers' Club has just held a special meeting to consider the Game Laws and the Game Bills before Parliament. The

chairman, Mr. Scot-Skirving, moved that the Club petition Parliament against the Lord-Advocate's Game Bill *in toto*. Mr. Durie, Barney Mains, moved that the Club think the Lord-Advocate's Bill an improvement on the present law, but the motion was not seconded, and the chairman's was declared carried. Mr. Hope, Fentonbarns, then moved that the club should express an opinion in favour of Mr. M'Lagan's bill, which excludes hares and rabbits from the game laws. The chairman moved the previous question, stating that by a former deliberation the club was in favour of Mr. Loch's bill. The motion of the chairman was carried by 10 votes to 9. The Aberdeenshire Branch of the Scottish Chamber of Agriculture had also a meeting, and passed resolutions adverse to the Lord Advocate's Bill.

THE HARES AND RABBITS.—The tenants on the estate of Lord Leigh, Stoneleigh, Warwickshire, have just had prepared an address expressing their appreciation of his lordship's liberality in granting them permission to kill the rabbits and hares upon their respective farms. They express a hope that his example will be extensively followed by other landowners, and that thus a frequent source of discontent will be removed. The address, which is richly illuminated, with a Gothic border, is signed by 27 tenant-farmers, each holding from 300 to 400 acres.

THE HARES AND RABBITS.—ANOTHER SAD STORY.—At the inquest on the body of Mr. John Hewitt, who held a farm under Sir Charles Anderson, Bart., at Lea, and whose untimely end we chronicled last week, it was elicited that deceased just before succumbing to the effects of the poison said, "I cannot bear it any longer: these rabbits have killed me." Frequently of late he would look out of his window and say, "I have sown my corn, but they'll eat it again." We have been informed that last year deceased had to sow some of his fields twice over, and, notwithstanding, one field of 16 acres yielded only 6 quarters.—*Stamford Mercury*.

THE CENTRAL AND LOCAL CHAMBERS.—Chambers of Agriculture are happily beginning to realise the fact that, in regard to the agricultural interest, they are of no use whatever. We have endeavoured, by means of arguments which at the time were unpalatably strong, to convince them of this palpable truth. The force of facts, data, and reasoning had not, however, its desired effect at the outset. For the provincial Chambers could not readily believe that the way they were being misrepresented and misled by a few men in London, who affected to be, "We, the Farmers of England," was really as bad as we described. This is often the result when a case happens to be put in a necessarily strong form, and the conclusions come to run counter to the hope—it may be of the "hope against hope"—of the personages interested. Men are thus staggered, but for the time being they are not convinced. Now, however, that the Chancellor of the Exchequer's financial statement for 1870 is before the farmers of the country, it will surely not need much more discussion for the agricultural interest generally, and provincial Chambers of Agriculture in particular, to fully estimate the depths of social, commercial, and political humiliation into which they have been led by the Council and officials of the Central Chamber, and their "Accredited Organ" Company (Limited). But our anticipations and predictions had happily begun before the Budget of Mr. Lowe was published. Therefore, now that the right honourable gentleman has, on the part of the Government, not only not conceded one single request made by the agricultural interest, but has increased the burdens of farmers, while he has brought them more and more into competition with foreign soils and climates, that indignation which we said was gathering will, in all probability, very soon explode with suitable force and effect. But of this we shall have more to say in another column. The really important data, however, to which we have here to draw attention is the way in which provincial Chambers begin to express their dissatisfaction at the manner in which their views have been perverted, and their publicly expressed displeasure has been turned to private account by a coterie of political adventurers and their co-partners—the Company (Limited) of newspaper speculators and puffers. The Devonshire Chamber was the first to move in the form of passing a resolution of dissatisfaction; and, to our surprise and great pleasure, the North of England Chamber endorsed the resolution subsequently.—*The North of England Farmer*.

HIGHLAND AND AGRICULTURAL SOCIETY.—The April monthly meeting of the directors was held in Edinburgh, Mr. Graham Binny in the chair. Specimen horse shoes, made after the Charlier and Goodenough systems, forwarded by M. Charlier, were laid upon the table, with an illustrated pamphlet by M. Charlier. Copies of the premium list and regulations for the general show which is to be held at Dumfries, from the 26th to the 29th of July, were submitted. The draft of a letter to the conveners of the counties connected with the show to be held at Perth in 1871, viz., Perth, Forfar, Fife, and Kinross, as to the auxiliary subscription, was read and approved. Forms of first and second class certificates in forestry, to be signed by the president of the Society, the board of examiners, and the secretary, were approved of; and it was resolved that the next examinations in forestry should be held about the beginning of November. The examination of the students at the Edinburgh Veterinary College, for the society's veterinary diploma, was fixed to take place in the College Hall, Clyde Street, on the 18th, 19th, and 20th April, commencing each day at ten o'clock, and it was resolved to grant the usual medals to the students who pass the best examination in the various departments. The secretary read a letter from the agent for Professor Dick's trustees, sending one from Professor Williams suggesting that there should be two examinations for the Society's veterinary diploma every year, instead of one, namely, the usual examinations in April, and an additional one about Christmas, as two examinations in the year are of great advantage to any student who may be rejected. The proposal was agreed to by the board. Drawings of first and second class cattle waggons, as patented by Mr. Reid, Granton, Edinburgh, were submitted to the meeting.

THE EDINBURGH VETERINARY COLLEGE.—There have been no lectures on anatomy in the College for a fortnight, owing, as it is alleged, on one side, to the inability of the lecturer, Professor Brandford, to manage his class; while on his part it is understood that there is a feeling against him, amounting to something like a conspiracy, on the part of the students and others in connexion with the College. Certain it is that he has been grossly insulted in various ways, pelted in the face, and burned in effigy; and, as showing their spite towards him, the pupils have also broken several of the college windows. One of the students had been brought before the magistrates and fined for riotous conduct, and as he afterwards refused to apologise to Professor Brandford, that gentleman deprived the whole of his class of whatever advantage was to be derived from his prelections. Deputations of collegians waited upon the Lord Provost and magistrates, who are trustees of the College, and represented Professor Brandford as being unfit to teach them. The trustees offered their services to effect a reconciliation, but this was declined by the Professor, on the ground that he was well enough able to manage the class himself. Things have now come to this pass, that the trustees, at their meeting at the end of last week, came to the resolution "to make investigation into the state of matters in the Veterinary College, and take such evidence as may be judged necessary, with full powers to appoint a substitute for teaching the class of anatomy during the investigation, or for the remainder of the session, and make such other arrangements for the College as they may think necessary." It is to be regretted very much when such an *emoult* occurs in an educational institution of such importance.—*The Farmer*.

LOCAL TAXATION.—At a meeting of the Cambridgeshire and Isle of Ely Chamber of Agriculture, the question of "Local Taxation" was introduced by Mr. Hicks, J.F., Chairman, who proposed: "That a petition be presented to Parliament praying that the injustice under which the landed interests in this country labour, in being taxed for imperial as well as local purposes, in exoneration of other property, may be remedied." Mr. Oliver Claude Pell, J.F., Wiburton, seconded the motion. Mr. W. Marshall, of Ely, made a powerful speech in opposition; but the motion was carried by 22 to one, several not voting.

BEDFORDSHIRE AGRICULTURAL SOCIETY.—**SHOW OF STALLIONS.**—The first prize, £10, dark brown, Mr. J. Roach, Gulton, Uppingham (England's Glory); second, £5, Mr. F. Carpenter, North Marston, Bucks (Active),

WHARFEDALE AGRICULTURAL SHOW.

The Wharfedale Agricultural Society, established in 1798, has a history that extends far beyond the memory, if not the existence of its oldest supporters, but age sits lightly upon it. With all the vigour of a new undertaking, it anticipates nearly every other exhibition of the kind in its annual shows, and in its ripe experience it knows well the channels through which to aim at success. The seventy-second show of the society was held at Otley, when there was no falling-off in the display in the strictly agricultural sense.

The judges were: Cattle and Horses, J. Knowles, Wetherby; R. Bramley, Morton Grange, Northallerton; and W. Lancaster, Roker, Sunderland. Sheep and Pigs: C. Carr, Rowley Grange, Scarcroft; and J. Lynn, Stroxton, Grantham, Lincolnshire. They made the following awards:

SHORTHORNS.

BULLS.—One-year-old, Lieut.-Col. Markham, Aberford. Two-year-old or upwards, W. Fison and Co., Burley-in-Wharfedale. Bull calf, Major Stapylton.

Cows.—One-year-old, E. H. Marshall, Wootwood Hall. Two-year-old, W. M. Spence, Otley. Three-year-old or aged, Major Stapylton.

BULLS.—One-year-old, Wm. Linton, Sheriff Hutton (cup); 2, Thos. Wall, Addingham. Two-year-old or upwards, C. Wright, Tadcaster; 2, M. Lamb, Caley Farm, near Otley. Bull calf under 12 months, J. Renton, Otley; 2, J. T. Robinson, Thirsk.

Cows.—One-year-old, J. T. Robinson (cup); 2, T. H. Hutchinson, Catterick. Two-year-old, J. T. Robinson; 2, H. H. Fawcett, Old Bramhope. Three-year-old or aged, J. Renton; 2, J. W. Botcherby, Darlington. Heifer calf under 12 months, W. Linton; 2, J. T. Robinson. Cow, any age, for dairy purposes, J. T. Robinson; 2, W. M. Spence, Deanfield House, near Otley.

STALLIONS.—Blood stallion, J. H. Wright, Ripton. Roadsters, H. R. W. Hart, Dunnington Lodge. For draught or agricultural purposes, J. Forshaw, Burley-in-Wharfedale.

GELDINGS, COLTS, and FILLIES.—Hæck under 15 hands, any age, H. Crossley, Halifax (cup); 2, Thos. Clarkson, Leeds. Gelding or filly, foaled in or before 1866, for roadsters, T. Clarkson; 2, E. Charlesworth, Bradford. Gelding or filly, foaled in or before 1866, for coaching, W. Dawson and Sons, Otley; 2, Hy. Fawcett, Old Bramhope. Gelding or filly, foaled in 1867, for roadster, Wm. Stead, Cleckheaton; 2, Wm. Lumley, Wetherby. Gelding or filly, foaled in 1867, for coaching, Geo. Turner, Leeds; 2, Wm. Haigh, Lowmoor. Gelding, foaled in 1867, for draught or agricultural purposes, J. Robinson, Laister Dyke; 2, C. G. and W. Cheetham, Horsforth. Filly, foaled in 1867, for draught or agricultural purposes, Mrs. Haddon, Thirsk; 2, J. Wood, Beeston Roysds. Gelding or filly, foaled in 1868, for hunter, W. Ingham, Wortley; 2, E. and W. Pawson, Burley-in-Wharfedale. Gelding or filly, foaled in 1868, for roadster, Jas. Duncan, Otley; 2, D. Newson, Yeadon. Gelding or filly, foaled in 1868, for coaching, E. and W. Pawson, Burley-in-Wharfedale; 2, Chas. Pickard, Weston. Gelding, foaled in 1868, for draught, Mrs. Haddon, Thirsk; 2, Robt. Denison, Barrowby Grange. Filly, foaled in 1868, for draught, Wm. Hartley, Gledhow, Leeds. Colt or filly, foaled in 1869, for draught, B. Long, Kearby, near Wetherby; 2, Steven Fawcett, Burley-in-Wharfedale. Colt or filly, foaled in 1869, for roadster, J. T. Robinson, Leekby Palace, Thirsk; 2, J. W. Yeadon, Fawston. Colt or filly foaled in 1869, for coaching, Jno. Reanison, Thorparch; 2, Joseph Clarke, Beeston, near Leeds.

BROOD MARES.—Brood mares for roadster, Joseph Clarke; 2, W. M. Spence, Deanfield House, Otley. Brood mare for draught or agricultural purposes, Jno. Robinson, Laister Dyke; 2, Thos. Greenwood, Rodney.

HORSES IN HARNESS.—Horse or mare in single harness (cup), Josh. Smith, Bradford; 2, Waller and Son, Bradford. Cart horse or mare of any age, Illingworth, Ingham, and Co., Leeds; 2, James Hammond, Bradford. Pony of any age, not exceeding 13 hands, 1, owner's name not in catalogue; 2, Ann Stachiffe, Haworth Fold, near Burnley. Pony of any age, not exceeding 14 hands, Wm. Ingham, Wortley; 2, J. M. Kendall, Weston, Otley. Leaping pony, not exceeding 14 hands, J. M. Andrew, Dewsbury.

HUNTERS.—Hunter of any age (cup), Henry Crossley,

Broomfield, Halifax. Best leaper (cup), Henry Johnson, Spofforth.

STEEK.—Ram, any age (cup), T. H. Hutchinson, Manor House, Catterick; 2, Joseph Simpson, Spofforth Park. Shearling ram, T. H. Hutchinson; 2, J. Simpson. Tup hog, 1 and 2, T. H. Hutchinson. Pen of three gimmers, T. H. Hutchinson; 2, John Rishworth, South Milford. Pen of three wethers, 1 and 2, W. Thirkill, Aberford. Pen of three ewes and lambs, T. H. Hutchinson. Lonk ram, any age, B. Dobson, Ilkley; 2, John Hoyle, Keighley. Any distinct breed or cross not named above, 1 and 2, Jno. Jowett, Prospect House, near Keighley.

PIGS.—Boar, large breed, 1 and 2, Wilson Lister, Arley. Boar, small breed, J. and W. Sagar, Lister Hills, Bradford. Boar, middle breed, J. E. Fox, Great Horton; 2, J. and W. Sagar. Sow, large breed, Wm. Hatton, Addingham; 2, Wm. Parker, Bradford. Sow, small breed (cup) Wm. Hatton; 2, Wilson Lister. Sow, middle breed, W. Parker; 2, David Spencer, Keighley. Pigs not exceeding nine months old: Boar, large breed, W. Parker; 2, Wilson Lister. Boar, small breed, John Marshall, Yeadon; 2, W. Parker. Boar, middle breed, W. Hatton. Sow, large breed, W. Parker. Sow, small breed, T. Wilson, Crosshills; 2, W. Graham, Leeds. Sow, middle breed, W. Hatton; 2, F. Ambler, Keighley.

BORDER UNION AGRICULTURAL SOCIETY.

The annual spring show was held at Jedburgh. At a meeting of the Society lately held it was agreed that the autumn exhibition should be confined to sheep, and that the principal competitions for cattle, horses, and implements should be held in the spring. The Union includes the counties of Roxburgh, Berwick, and part of Northumberland.

The show of Shorthorn cattle was considerably larger than in previous years; but the stock was, with a few eminent exceptions, not of a superior class. Of bulls calved before 1st January, 1868, the premium was secured by Beverley Lad, third in the Highland Society's show last year. There was a great absence of really good bulls in the yearling class, few being beyond mediocrity out of the thirty-one shown. The cows and heifers were a better class, but the number shown was small.

JUDGES.—For cattle and draught horses: Messrs. Douglas, Athelstaneford; Gibbons, Burnfoot; and Hadden, Honeyburn. For hunting and other horses: Messrs. R. Calder, Kelloe mains; Ford, Hardengreen; and E. H. Maxwell, of Teviotbank.

AWARDS:
SHORTHORNS.

Bulls calved before 1st Jan., 1868.—First prize, Sir T. B. Hepburn, Bart., Smeaton, Prestonkirk. Commended: Mr. Smith, Melkington, Coldstream.

Bulls calved before 1st Jan., 1869.—First prize, Mr. Smith, Melkington, Coldstream. Commended: Mr. J. B. Brownell, East Bitchfield, Belsay, Newcastle-on-Tyne.

Bulls calved after 1st Jan., 1869.—First prize, Mr. Bell, Fans, Earleton (late Cockburn); second, Mr. John Dinning, Belford.

Cows not exceeding ten years old.—First prize, Mr. John Atkinson, Byewell Hall Farm, Stocksfield-on-Tyne; second, Mr. J. Oliver, Hawick.

Heifers, two years old.—Mr. John Atkinson, Byewell Hall Farm.

Heifers, one year old.—First prize, Mr. J. Atkinson, Byewell Hall; second, Mr. R. Richardson, Crailing Nook, Jedburgh.

HORSES.

Cart mares, with foal at foot, or to be in foal at the time of exhibition.—First prize, Mr. Shortreed, Attonburn; second, Mr. J. Lawrie, Mitchelstone, Stow.

Cart mares or geldings, above three years old.—First prize, Mr. J. Lawrie, Mitchelstone, Stow; second, Mr. Oliver, Lochside, Kelso, Sharp.

Colts and fillies for agricultural purposes, two years old.—First prize, Mr. Adam Wilson, Midshields, Hawick; second, Mr. J. Lawrie, Mitchelstone, Stow.

Hackneys (geldings or mares).—Dr. Kynock, Greenlaw, Berwickshire.

Ponies (geldings or mares), under 14 hands.—Mr. J. Johnston, Crailing Hall, Jedburgh.

HUNTING STOCK.

Four year olds, likely to make good hunters.—First prize, Mr. G. Dove, Todahawhaugh, Hawick; second, Mr. J. Fenwick, Northhouse, Hawick.

Three year olds, likely to make good hunters.—First prize, Dr. Kynock, Greenlaw, Berwickshire; second, Mr. Pringle, Cleithaugh, Jedburgh.

Brood mares.—First prize, Mr. Elliot, Hindhope, Jedburgh; second, Mr. Steen, Pilmuir, Hawick.

Four year old hunting colts and fillies.—Mr. G. Dove, Todahawhaugh, Hawick.

Melkington, Coldstream. Commended: Dr. Kynock, Greenlaw, Berwickshire. Three year old hunting colts and fillies.—Prize, Mr. W. Smith, law, Berwickshire.

Made hunters.—First prize, Mr. Dodd, Nisbet, Kelso, Ben West; second, Mr. T. E. Boog, Lanton, Jedburgh.

PIGS.

Boars of the large breed.—Mr. Ross, Newtonlee, Kelso. Boars of the small breed.—Major Dickens, Corahill House, Coldstream.

Brood swine of the large breed.—Mr. Haddon, Honeyburn, Hawick.

Brood swine of the small breed.—Major Dickens, Corahill House, Coldstream.

COTTINGHAM HORSE SHOW.—Judges, Mr. C. Wood, South Dalton; Mr. R. Stephenson, Goodmanham; and Mr. Green, Withernwick. Entire horses for hunting purposes: First prize, Mr. G. Lamplough's Strathern; second, Mr. W. Shaw's Prince Plausible. Coaching stallions: First prize, Mr. W. Laverick's Emperor; second, Mr. G. Holmes' Darlington. Roadster stallions: First prize, Mr. J. Leake's Lord Derby; second, Mr. Brown's President. Agricultural stallions: First prize, Mr. F. Simpkin's Sir William Wallis; second, Mr. T. Carrick's Brown Hero. Hackney mares or geldings: First prize (a silver cup), Mr. Stephenson, Cottingham; second, Mr. Holmes, Beverley. Ponies under fourteen hands: First prize, Mr. Simpkin's Maid of all Work; second, Mr. H. Wilson, Cottingham.

STALLION SHOW AT CARLISLE.—This was a show of entire horses for the prizes offered by the East Cumberland Agricultural Society. Judges: J. Jardine, Dryfeholme, Lockerbie; Laurence Drew, Merryton, Hamilton; J. Davidson, Longbank, Alnwick. Awards: Thorough-bred Stallions—1st, J. Casson's Sincerity, by Red Hart; 2nd, Toppin's Kingfisher. Highly commended—J. Casson's Motley. Cart Stallions—1st, W. & H. Phillip's Clydesdale Tam; 2nd, G. & A. Nichol's North Star. Highly commended—W. Allerdice's Dumbarton. Commended—J. Mouney's Dundonald.

MR. DUCKHAM'S THIRD PERIODICAL SALE OF HEREFORDS AT HEREFORD.—This experiment was

again tried on the last Wednesday in April, but with an equally unsatisfactory result in the way of business. There were some twenty lots of cows and heifers and a dozen or so of bulls offered; but, according to the local journals, "the biddings were by no means of that spirited nature we had hoped to have seen;" and no return of the prices is given.

JUDGES AND JUDGING.—Notwithstanding the confidence which Mr. William Torr is said to have expressed as to carrying his motion it will be found that he considerably modified this on bringing it before the Council of the Royal Agricultural Society, and ultimately withdrew it altogether! We refer our readers to the report of the proceedings, and in doing so would congratulate the members generally of the Society on the clearness and fulness with which these reports of Council meetings are now given. Mr. Milward appears to have been the only other member of the Council who went with Mr. Torr, and his sole argument was directly answered by Mr. Jacob Wilson. The discussion ran mainly on Shorthorns, and there was a very becoming tone about Mr. Booth's observations which went to support all we had advanced as to the chances of younger exhibitors. If a good pedigree be necessary for bulls, and we should be the last to question this, cannot Messrs. Torr and Milward see that the conditions of entry might be made to assimilate very much with those for thorough-bred horses? Let a pedigree be given with each bull, and let the decision over any such qualification rest, not with the judges, but with the Council or stewards of the show.

THE MALT TAX AND "THE ORGAN."—Certain recent appearers in, or rather poachers upon, the newspaper field have of late been trying very hard to make the farmers believe that Mr. Lowe would take off part of the malt tax. We knew better. However large his surplus might be, we felt certain he would do nothing of the kind. Hostility, deadly hostility, to the agricultural interest is the badge of the tribe with whom he is officially connected, and the false prophets have an uncomfortable task in excusing themselves to their dupes as well as they can. We need not refer more particularly to the organs in question, not feeling inclined to advertise mischievous commodities gratis.—*The Herts Guardian*.

LICENSED TO DEAL IN HORSES.—Sir George Cholmondeley, Bart., who exhibits hunting stock so regularly at the Yorkshire shows, and who had the "best of all the hunters" at the Manchester Royal Meeting last year, has just taken out a licence to deal in horses. Mr. Milward has long had a similar sign board stuck up in a tree at Thurgarton, as there are others we know of who might as reasonably announce their "profession" in this way.

CALENDAR OF AGRICULTURE.

The lands to be planted with beetroot and Swedish turnips will receive the last earth working early in this month, and will be thoroughly pulverized and cleared from weeds and stones, and laid into a level condition. Ridglets are formed, 28 inches apart, by a single or double furrow of the common plough, deeply done to throw fresh soil over the tops of the drills. Farmyard dung in a half-rotten condition, short and moist, is spread along the intervals of the drills, in the quantity of 20 loads of one-horse carts and 15 loads of two horses, which must cover the bottom of the hollows without any bare space; and this condition must be held a general rule in the planting of root crops. The ridglets are split and the earth is reversed over the dung by a "bout," or two furrows of the common plough, which throws from opposite sides a deep furrow of earth raised by the narrow point of the one-winged share or sock. On this newly-formed ridglet of fresh soil the seeds of beet are deposited by hand dibble

or sown by machine, and may be previously steeped for 48 hours in solutions of caustic substances and dried with hot lime. This preparation may hasten the germination of the seeds without much aiding the succeeding growth. The drills are rolled by a weight of 5 or 6 cwt. of cast iron. The sowing of beet is best done by the middle of the month, and very beneficially after 20th of April.

Swedish turnips are sown during the whole month, exactly in the manner that has been described, except that in moist seasons the drills may not be rolled after sowing, but left loose on the top. Tankards and early white turnips are sown for use in autumn, and rape on any left grounds or inferior lands, to be consumed on the ground by sheep for a catch crop of wheat. The purple and yellow-topped swedes are yet the best varieties of that most valuable root.

Plant cabbages by the middle of the month, on deep,

strong, clayey loams of the first-rate quality, which have been prepared by the cultivations of ploughing, harrowing, and rolling, hand-picking of weeds and stones, and brought into the condition of a pulverized fitness. The drills must be 80 inches wide to allow the spreading of the heads of the cabbage, and the allowance of farmyard dung must be larger than for any other green crop. The plants pulled from the seed-bed are placed upright in tubs of water that immerse the roots, which have been dressed by hand-cutting into a short and compact neatness from the long fibres. After being in this position for two days, the plants are carried to the field in the tubs, and planted by hand dibble on the ridglets of land, at two feet distance, over the dung and previously rolled, and at the same depth as the plants stood in the seed-bed, as marked by the skin of the stem. The plant requires much moisture, and is best planted in the wettest weather the work can be done. Fill up any blanks that occur in order to produce an even crop on the ground. The drum-head variety is the best cabbage plant yet known, producing very largely and readily under the requisite circumstances of deep strong lands of the very best quality, under a moist climate of frequent rains and warm suns. The management of the crop is costly, but the produce is large, and forms a most invaluable spring food for ewes and lambs at a season the most trying for the use of the green food of the farm.

Khol-rabi and savoys are cultivated in the same manner as cabbages, but claim a small notice, as the first plant is very coarse and fibrous, and the latter yields leaves only and no bulb.

Pare and burn lands during the month, and spread the ashes as produced, in order to cool them.

Prepare the turnip lands for sowing next month, and cross-plough the clay fallows for wheat at every convenience.

Dung heaps must now be turned over by hand forks, and all lumps carefully broken and shaken out, and the heap loosely placed, in order to produce an even fermentation for use.

Watered meadows are now shut up for hay, and all pastures and grass lands must now be carefully protected with fences and gates.

Dig hop grounds, and tie the bine to the poles.

Finish the sowing of grass seeds left from last month.

Put mares to the stallion, and geld colts, though this operation may be more safely done the preceding autumn.

Stall-fed cattle will now be all disposed of, the fat animals to the butcher, and the leaner beasts will go to the pasture fields, to be fattened on grass. Arrange the cattle in the pastures by age, size, and condition, in order to a systematic order of the manufactory of animals, both for pleasure and profit. The colour of a herd of cattle is a point to be regarded, showing a taste which leads to perfection. A shelter shed and copious supply of water are essential to pasture grounds. The milch cows are accommodated with a grazing closely adjoining the homestead, with a short and easy communication with the cow shed, which forms the end of the wing of the farmery, with a door of entrance. This field is the lambing ground, and is enriched by the ewes consuming the roots, by bush-harrowing, and rolling, and by the sowing of seeds of clover and grass at times, as may seem necessary. A shelter shed, with an ample supply of water are necessary, and also an open clump of trees on any knoll or high ground, to afford shelter to the animals from rains and heats.

The oldest calves will be lodged in a grass paddock, provided for the special use, with a shed and water, and have one suckling daily with the green food of clovers and vetches. The calves in the pens should have green meat to accustom the use of such food before being turned out.

The ewes and lambs that are consuming the earliest green meat of the farm, in rye and winter vetches, will require a fresh piece of ground every two days, which is guarded by flakes or bundles, and are folded regularly over the cleaned land, which is thus prepared to be sown with turnips, one furrow of ploughing drilled into the ground with a manure of guano or bone-dust. The green meat may be cut by scythe, and placed in rack for the sheep, with oats and small broken cake placed in troughs, to correct the juicy quality of the very succulent herbage. In the end of the month green meat will be provided for the soiling of horses, cattle, and pigs in the yards, which must be amply littered. Watered meadows will afford a green meat for ewes and lambs in pasture, or in hurdled spaces—a most invaluable production at this most critical season of the year, for the food of animals.

Finish the sowing of grass seeds on barley and wheat tilths. Cover by light harrowing and heavy rolling.

Gather, by hand-picking, stones from the surface of lands to be mown for hay, chiefly the young seeds sown with a grain crop. Lay the stones in a heap, to be broken for road metal, or for drains. This gathering of stones must be done early in the month, or rather in last month, in early situations.

The stubble of strong straws of wheat will remain unbroken during mild winters until the hay harvest, and much impede the scythe. The stubble must be broken before the rise of the grasses, by a heavy bush-harrow of thorns under a heavy weight, as a gate, or a platform of timber, which goes and returns in the same path, to reverse the action of the harrow. This operation is not required in many places, and is much required in others, from various causes.

Fell oak trees for barking; strip the bark by hand, chisel, and mallet, and dry it for use.

Wash sheep by hand in a clear running stream two weeks before the shearing commences, to prevent the maggot-fly depositing the eggs on the animals; sprinkle the bodies from head to tail, from a dredging-box, with a mixture of hellebore-root powder and black brimstone, $\frac{1}{2}$ lb. to $1\frac{1}{2}$ lb. This precaution is seldom required beyond a distance of more than three miles from the sea, the maggot-fly not being inland.

Weed young quickset hedges; pull or cast away the weeds that overtop and hinder the thorns, leaving the root weed to retain moisture and defend from drought without exposing the roots to the sun, as is done by spade-cutting off the soil to remove the weeds.

The grains of last year will be wholly cleared away, unless a portion of the crop be reserved for litter, and thrashed as required. The thrashing may be all performed in March and early in April, and the straw built into a rick for summer use. All grains being carried away from the thrashing barn, the erection of a granary on any farm is restricted to a temporary accommodation of seed corn before being sown, and of wool before being weighed, preventing an unnecessary expense in the building and the cost of repairs. Large erections are the remnants of Saxon "granges," yet visible in the huge and unnecessary flail-thrashing barns of modern time, so obstinately retained by prejudice and vacuity of mind.

CALENDAR OF GARDENING.

KITCHEN GARDEN.

This month includes the late crops, but not the very latest. Commence with kidney beans, dwarf, or Mackie's Monarch for a full crop in July, and repeat the sowing in the third week. Scarlet and variegated runners are first called for, planted over a shallow trench with a layer of moist decayed mixed dung, pressed over with light earth

of three inches in depth, to secure against scorching weather of next months. Dry soils are required, but not arid, and the seeds perish in wet grounds, as in the case with French beans. It is a good policy to be prepared early in April with a stock of beans sown in pots, to be now transplanted into fresh earth with dung, and with open-ground plantings in summer.

Sow peas largely in two divisions in the first and second weeks of the month, the first sowing with the later variety of the early kinds, and the second division with the tallest and latest varieties, as Knight's Marrow, and Adamson's Matchless, with the new names of Abergavenny and Victoria Marrow. To guard against mildew in late crops, trench the ground into a row of three feet wide and one foot deep, with rotten dung in the bottom spits. Water profusely by the rose; fill up with the soil and raise it to a flat ridge a few inches high along the centre; water again, that the ground may be thoroughly wetted; a few days after sow the peas an inch asunder. By following these directions fine late peas may be secured at Michaelmas, even when sown in July.

Plant the late crops of potatoes, and if practicable plant the rows north and south to admit an equable diffusion of sunlight.

Sow cucumbers on a ridge over manure.

Repeat all the sowings of last month, except the tap-rooted plants, to afford a succession of supplies.

Sow dwarf Indian corn about the 15th.

Suffer no weeds to prevail, and where there is time to Dutch hoe and finely rake every portion of uncropped land the extreme neatness of the garden will amply repay the trouble.

FRUIT DEPARTMENT.

Water strawberries if the ground and weather be dry; the first bloom perishes under a scorching of May and

June. Fruits of trees and shrubs grow unmolested during this month.

FLOWER GARDEN.

Sow annual seeds in the borders; biennials in a nursery plot for the next season, thus for Brompton, Queen, and German stocks. Propagate by slips and cuttings. Wall-flowers, rockets, &c., put a glass over to shade them.

Roses must be watched. The worm in the bud is a sore enemy. Stir the surface of the ground when nearly dry after heavy rains. It is a great thing to know how to use a Dutch hoe and a rake adroitly.

Attend to air and water in any glass structures.

In the end of the month the more elegant flowers, as pelargoniums, verbenas, and nemophilas, are bedded-out on the parterre system in plots on lawns. The mixed collections require some little taste and judgment, to be got from experience, and attention on a small scale.

Shrubberies may be littered by the falling of laurel and other evergreen leaves: let such be removed to the compost grounds. Eradicate lilac suckers and keep all shrubs in figure by judicious thinning back to larger branches. Attend to every office of neatness and order as respects weeds and rubbish of any kind, the rolling of gravels, and the lawns prior to mowing.

Never cease to collect manure in the liquid pit and in the dry compost heap. Fine earths, the droppings of animals, scrapings of roads and paths, the tender turf of short grass from road sides, with vegetable refuse of all kinds afford a never-failing source of materials, assisted by the liquids of the dwelling house that are urinary, soapy, and in washings of a mixed composition. The solid fæces are caught into boxes to be largely mixed with fine earths to form a most powerful manure for the root crops of the garden, as onions, leeks, and similar plants of the succulent nature.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR APRIL.

The past month has been characterised by great inactivity in the wheat trade, though as we write a decidedly firm tone prevails, and the currency shows an upward tendency. Up to very recently millers have continued to act with extreme caution, and values have with difficulty been maintained, but a very sensible diminution has taken place in the stocks of foreign wheat on hand, while the holding of English wheat has been much reduced. Millers accordingly now show some anxiety to purchase at present prices, their stocks being very low, but the more immediate cause of the late rise in values has been the shortness of the supplies of English wheat on offer at Mark Lane. The navigation is now re-opened in Europe, while the American canals are again free from ice, and shipments are already being resumed with some activity in both quarters. The intelligence of the late rise in prices on this side will probably stimulate this movement, though the quotations current here are still too high to admit of much margin of profit on imported produce. The return of several steamers from the Baltic may be looked for at an early date, but some time must elapse before the receipts of foreign wheat can again be on any very great scale, and the firm tone now prevailing in the market may, therefore, be expected to be maintained. The average price of wheat, as shown in the *Gazette* returns, has not materially varied throughout the month.

The weather, which was disappointing and unseasonable at the opening of the month, suddenly changed at about the third week, and since then we have had a spell of brilliant weather, unusually warm for the time of year. The early-sown wheats are well above ground, and are looking strong and healthy, but the plants are not forward as the lengthened winter greatly checked vegetation. This, however, is not to be regretted as it may now be hoped that the plants have

obtained a firm hold in the ground and will be able to stand any moderate reverses of fortune.

There has been an active demand for feeding stuffs throughout the month, and all kinds have tended upwards in value. The arrivals of oats have been somewhat small, and sound corn has advanced about 1s. to 1s. 6d. per qr. both on the spot and afloat.

Maize has also been in good request, and the stock being light has commanded more money. The utility of this article as feed is becoming very generally recognized.

Beans and peas have ruled very firm in value, but barley has been somewhat inactive.

In the hop market there has been scarcely anything doing, and where sales have been pressed lower prices have been submitted to. The holding of American hops is very large, and a disposition was at one time shown to force the market, which led to a considerable reduction in values. Present quotations are nominal, especially as regards foreign hops and yearlings, which have recently been altogether neglected.

The markets have been only moderately supplied with hay and clover, and although the demand has been far from active prices have been maintained. The quotations for hay have ranged from £3 10s. to £4 4s., and for clover £4 to £6 10s. per load.

The imports of foreign potatoes have been rather liberal, but the quality has not been generally good. With home-grown produce the market has been fairly supplied, but there has been less anxiety to force sales as it has been found that the roots will keep better than was at one time anticipated. Prices of both flukes and regents have tended upwards, and, on the whole, the trade has been of a more satisfactory character than for some time past.

On the continent the grain trade has not varied greatly.

Very little has been passing on English account, owing to the dull state of the market here; but shipments are usually interrupted during the winter season. From New York the exports of all kinds of grain have been on an extensive scale for the time of year, shippers having been encouraged by a decline both in gold and ocean freights.

REVIEW OF THE CATTLE TRADE DURING THE MONTH OF APRIL.

The cattle trade during the past month has differed in no material degree from the preceding month. The receipts of stock have been on a full average scale, and have included some prime breeds; in fact, the actual weight of meat exhibited has been above the average. The Norfolk beasts have come to hand in prime condition, and although the animals from Scotland have continued limited, the quality of the beasts has gone far to compensate for the shortness of the supply. Included in the foreign supply have been some servicable French and Spanish beasts. The former, although they are still far short of the perfection attained by home-bred stock, have considerably improved of late, and have become much more saleable. As regards trade, the tendency generally has been towards quietness; but prices at the same time have not been subjected to any severe fluctuations. At the commencement of the month, influenced by the cool weather, the demand ruled steady, and the best Scots and crosses realised 4s. 10d. to 5s. per 8lbs. Subsequently a fall of 2d. took place; but this was almost immediately recovered, and at the present moment the extreme value for the best Scots and crosses is 5s. per 8lbs.

A fresh outbreak of the foot-and-mouth disease has occurred in some districts, and some losses have been entailed on graziers; but the ravages have not as yet attained important dimensions, neither have the losses been heavy. It is to be hoped, however, that it will act as a warning to the authorities to be vigilant to prevent a recurrence of last year's distress.

As regards sheep, the supplies have been about an average, both as regards number and condition. The trade on the whole has been quiet; but prices have been without movement of importance. At one period the best shorn sheep were selling at 4s. 10d.; but the price now is 5s. per 8lbs.

The market has been fairly supplied with lambs, for which the demand has been steady, at from 7s. 6d. to 8s. per 8lbs.

Calves have been quiet, and pigs have sold slowly.

The continued drought has caused a scarcity of grass in the pastures, and the wheat at the same time being very backward, a strong demand has necessarily been promoted for artificial food.

The annexed figures show the total supplies exhibited and disposed of at the Metropolitan Market during the month:

Beasts	...	...	19,528	Head.
Sheep and Lambs	...	...	164,553	
Calves	...	...	1,800	
Pigs	...	...	430	

Total 186,311

COMPARISON OF SUPPLIES.

	Beasts.	Sheep and Lambs.	Calves.	Pigs.
April	18,849	144,760	1,320	885
1869	16,280	138,600	1,403	1,765
1868	16,250	113,770	977	1,805
1867	11,350	120,180	208	3,331
1866	19,670	92,850	1,279	2,602
1865	22,200	107,010	1,596	3,100
1864	19,290	113,080	1,341	2,540
1863	19,000	110,500	1,077	3,055
1862	17,140	102,630	497	2,662
1861	18,512	114,450	1,848	2,140
1860	16,850	110,114	480	1,990
1859	17,950	104,380	1,332	2,097
1858				

The arrivals of beasts from our own grazing districts, as well as from Scotland and Ireland, thus compare with the three previous years:

	April, 1870.	April, 1869.	April, 1868.	April, 1867.
From—				
Norfolk, Suffolk, &c.	8,431	4,820	6,800	6,200
Other parts of England	2,542	2,666	4,020	2,150
Scotland	1,479	571	1,337	670
Ireland	725	353	290	130

The total imports of foreign stock into London during the past month have been as under:

	Head.
Beasts	5,196
Sheep and Lambs	22,173
Calves	1,372
Pigs	1,387

Total 37,668

Imports at corresponding periods:

Total in	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858
	48,925	18,267	36,925	37,115	27,816	15,442	16,021	9,616	11,119	10,489	8,888	5,998

Beasts have sold at from 3s. to 5s., sheep 3s. to 5s., lambs 7s. 6d. to 8s., and calves 3s. 10d. to 5s. 8d. per 8lbs., to sink the offal.

COMPARISON OF PRICES.

	April, 1866.	April, 1867.
	s. d. s. d.	s. d. s. d.
Beef from	4 0 to 5 6	3 4 to 5 2
Mutton	4 6 to 7 0	3 6 to 6 0
Lamb	6 8 to 9 0	7 0 to 8 0
Veal	5 4 to 6 4	4 6 to 6 0
Pork	3 10 to 5 0	3 0 to 4 2
	April, 1868.	April, 1869.
	s. d. s. d.	s. d. s. d.
Beef from	3 2 to 5 0	3 2 to 5 8
Mutton	3 4 to 5 6	3 2 to 6 6
Lamb	6 6 to 7 8	6 0 to 7 8
Veal	4 0 to 5 6	4 8 to 6 2
Pork	3 4 to 4 4	3 8 to 5 2

In the dead-meat markets fair supplies have come to hand. The trade has been quiet, as follows: Beef from 3s. 4d. to 4s. 8d., mutton 3s. 4d. to 4s. 8d., lamb 6s. 8d. to 7s. 4d., veal 4s. 4d. to 5s. 2d., and pork 3s. 8d. to 5s. 6d. per 8lbs., by the carcase.

NOTTINGHAMSHIRE.

We have completed as favourable a spring seed-time as we could desire. All our heavy soils have worked admirably. The very variable weather we have had during the winter has so finely reduced the texture of the soils that there is every prospect of spring-sown crops being good. The breadth sown of all spring corn is above the average; the low value of wheat has deterred a many on our light soils from sowing that grain during the winter months, consequently the additional breadth of barley and oats. The wheat plant is backward, and in some places thin of plant, but with a change of weather may soon present a different aspect. Spring appearances are very deceptive, and some of the best crops we have known have been bare in the spring months. A good deal of rolling has been done, the motive being to consolidate the soil and give the roots of the plants a firmer hold. We very much doubt the wisdom of the act, for the soils are invariably light when the farmer is tempted to compress, thinking that a contrary state of things would be best. Now, as far as our experience goes we never had very favourable results when the soils were soddened and stiff and hide-bound by long-continued rains; such a state of things in spring we remember have always brought on much labour, and very irregular crops. The lightness of soils (we speak now of strong loams) should, we think, never be counteracted, but looked upon as being a state which very much facilitates the rootlets of the plants, and when rains come are so remarkable for their rapid growth. We much rather prefer harrowing, which generally promotes tillering, and leaves the soils as far as tenacity is concerned in much the same state. There is a damage done by the roller which many do not observe, the action of which is easy to be seen. A great many of them are not more than some 14 to 18 inches in diameter, consequently the centre being so near the ground the resistance, which is equal to the power applied,

pushes forward the light earth for some inches before the roll, and so with the earth the plants are driven forward, and the roots broken, and irreparable damage done. Many a crop we have seen destroyed in trying to improve it, instead of patiently waiting. If rollers must be used, they should be of large diameter, or they must injure the crop, and if the soils want consolidating feed sheep or cattle upon them, the action of whose feet give a direct downward pressure. We have put on lands subject to wire-worm live stock, and fed them with cake and other food, and what with the trampling and the deposits in the shape of manure and urine, the crops have recovered wonderfully, care being taken that the weather be favourable. We make these cursory remarks because the roller has been so freely used this spring, and we doubt not in many cases to much hurt. The lands intended for the growth of turnips are in a favourable state, and drilling will no doubt be early, for early sowing after all is the safest; late crops last year were nearly a failure. As far as the application of farm-yard manures are concerned we perceive a marked improvement among the farmers. That is, its early application to the soil, so that it may be well incorporated and subject to those chemical changes which take place in our compost heaps of soil we prepare for our grass lands. Plants cannot derive immediate benefit from fresh manures out of the fold-yard, and the manpold and turnip plant need a prior preparation to ensure safe growth. We manured a field of clay land rather heavy (it was drained) in December last, and ploughed it in, and now it is in beautiful condition for the good crop which we intend putting in the beginning of next month. Potatoes have kept well, and the time for setting will soon be at hand. The low prices of bread have checked consumption, so that we may expect them reasonable in prices. The sales of farming stock, live and dead, have been good, and realized more than for some years. Horses, cattle, and sheep have been in request, and in some instances made high figures. Pigs, short vacillating animals, are very dear and very scarce. We should not be surprised if within twelve months they were to hop down. Our corn markets are very tame, and devoid of animation; any attempt at an advance is soon met by liberal supplies. Labour is more plentiful, and meets the continued demand from our mining districts. With high farming we could easily employ our redundant population, but that will not be without security for capital; and when will the English farmer get that? Impoverished farms are to let, and in too many instances are taken by those of limited means; while men of means are driven to employ their money in other channels. For the good of both landlord and tenant we must eventually have the capital of the cultivator protected.—18th April.

NORTH NORTHUMBERLAND.

At this advanced period of the season we are in no favourable position to report. Early vegetation, field and garden alike, show a blank of the green leaf, quite three weeks later than ordinary seasons. Nor do we recollect any ordinary season presenting so little life on the autumn sown wheat, particularly on the loamy clay land, cropped after a naked fallow. We had fields looking well planted, presenting a favourable aspect until the end of February. Alternate severe frosts, fresh, hail and sleeting rain seem to have damaged the plant; the land, to walk over, now feels soft and floury under foot. Many of the plants weak and sickly, or dead out, inasmuch as at a distance no green blade is seen, except a piece near a hedge-row or furrow edge; rolling and harrowing (when the land will bear it) has been the rule. Land very dry and dusty. Whether the plant may recover or not is problematical. At any rate we can only look for a late harvest. Spring sown wheats and all cereals, barley and oats, have gone in well, and the braird very promising. Beans also have a favourable appearance. Potatoes are being planted in large breadths under favourable auspices, the late crop being used liberally for pig and cattle feeding; our late fine turnip crop being about a finish. We have experienced about two weeks of very fine weather for all field work, and spring sowing, including clover and grass seeds, all about a finale. The days hot, with generally spring wind—nights a little chilly or raw frost, which checks vegetation, consequently grass and all green herbage very backward. Hence the ewe and lamb are as usual really *welters*, as in other seasons a deal of oats, bran, and other artificial food has been and still

is consuming. Our butcher markets have always had good supplies, and seem now over-stocked with foreign supplies. There may be a large market supply from the north side of the Tweed, yet such does not appear in the demand for grazing land. The lots by auction nearly all fall far short of last year's rents, varying from $2\frac{1}{2}$ to upwards of 30 per cent. in some instances. The snow seems now all melting off the mountain, which enables the mountain sheep to pick up their nibble on their native domain. Farm labour has been well worked up since the last week in March, and we are quite up with ordinary seasons. Draining has not been so general as on some former years, yet the able-bodied have been fully employed.—22nd April.

NORTH WALES.

We are now sadly in want of rain to set the pastures growing, and give a cheerful look to the face of nature. The north and north-east winds which have prevailed for two or three weeks, and the brilliant sunshine of the past ten days have caused everything to look parched. The nights have generally been a little frosty, so that vegetation is decidedly backward. But, as the wind has within the past 24 hours veered round to the south, and as the mercury has gradually fallen during the last two or three days, we are in hope that before this will be in print some soaking showers will have refreshed the thirsty fields. We have been waiting for the past fortnight to sow guano on some meadow land, for, as there were no indications of rain, we thought it best to bide our time. As we write we are preparing, however, for sowing to-morrow, believing that rain is not far off. The spring tillage though late before it was commenced, owing to the heavy rain fall which succeeded the frosts of the latter part of the winter, has proceeded without a check. The land was in first rate condition to receive the seed, the winter frosts having caused the soil to pulverise easily with less than the ordinary amount of rolling and harrowing. The wheats have gathered together lately, and some fields have a capital appearance, with a full plant, strong, and healthy; but, generally, they are thin and weak, giving no good promise. The winter was a most trying one to them, and, remembering the vicissitudes they have encountered, they are perhaps just in as good a state as we could have expected. We passed through some midland and northern counties last week, and were sorry to observe the wheats in our line of travel looking anything but well. A large breadth of potatoes has been planted in excellent condition, and, except in our high mountain farms, this work is nearly over. Last year's crop kept much better than was anticipated, and the price throughout the winter has been low; now it is of course somewhat higher. The lambing season was, on the whole, very favourable, and a good fall of lambs is everywhere spoken of. Some of our flocks on the mountain farms have been reduced by the severity of the winter; but where a little care and attention were paid to them the losses have been but slight. We have a good demand for fat sheep, with a high price, and mutton is scarce. There is little feed in the pastures yet, and winter fodder is well nigh exhausted; unless, therefore, we get rain soon, the cattle must have short commons. We are sorry to report that there is a good deal of scab amongst the sheep in various parts; at the same time it is a matter for congratulation that our herds are free from disease of any kind.—April 20.

SOMERSETSHIRE.

It is several years since we had two such dry months as the past and present. For the past six months north and north-east winds have taken the place of the more westerly ones usually most prevalent. The wheat plant is backward, and shows a deficiency in plant. Some rain next week will no doubt greatly alter the complaint now observant in the wheat. There is the appearance of tillering out, and the amount of this required to make up for the thinness of the plant will greatly depend on early rain. There has been a great deal more re-sowing than usual, especially on the light soils; the wheat looks best on the stone rock. Oats and barley sown last month have come up nicely. We have not had for years so fine a season for preparing the land. Mangolds are much more forward than usual, and a large quantity of these useful roots will be cultivated this year. Beans have come up well,

but a considerable portion of the winter-sown are thin; some pieces very promising, others hardly worth working. There has been almost a failure in winter oats and barley for feeding. Vetches backward. Sheep-keep very scarce, which has brought down their value considerably. The supply being beyond the demand, there is not that brisk sale amongst other stock. Most of the dairies are filled up. Cows and calves have sold very high this season. The dairies are consuming much more hay than was expected, and with present prospects it must continue some time into next month. There is very little doing in wool; prices have little altered. Beef still ranges from 11s. to 12s. per score, and pigs 10s. to 11s. Mutton and lamb to this time firm, at late prices; not so much on offer as some

seasons, and the supply will probably be shorter during the next month. Wheat has been more steady in value lately: best white 5s. 6d., red and nursery 5s. to 5s. 3d. per 62½ lbs.; flour 30s. to 31s. per 280½ lbs.; beans 5s. to 5s. 1½d., few offering; barley, little left in farmers' hands; oats have sold better, at 21s. to 24s. There is a good deal of unthrashed wheat on hand, waiting for better prices, and the supplies are short. Millers are lessening their stocks, and they are freer buyers, but cannot get up the price of flour. There is the appearance of a general blossom of fruit trees; peaches and apricots well set; plums in general blossom; pears and apples bid fair to follow in the same luxuriance. The frosts this month, beyond retarding, appear to have had no injurious effect.

REVIEW OF THE CORN TRADE DURING THE PAST MONTH.

The month of April has passed without the customary genial showers. Some fell at the close of the first week, but the temperature was low and nights frosty for more than a fortnight, when a burst of mid-summer came, still with very little rain. The Lent corn has been well got in, but that lately sown cannot emerge from the hard crust where it is deposited, and should seasonable weather be long withheld there will be a short crop of grass, and most of our corn also. But the clouds have a Ruler whose goodness never fails, and, though deferred, we would yet expect the needful blessing. There has, however, been sun and heat enough for all deeply-rooted things, so that the fruit-trees have become suddenly charged with abundant blossom, and the wheat-plant that has outlived the late fluctuations has made some advance, and shows a brighter green. But the misplant is only the more apparent. Raised by repeated frosts, and dried afterwards by cutting winds, some fields present a very sorry aspect, and but few pieces look thoroughly well. Some take it for certain that at least we shall have a late crop, and others prophecy a poor one, but we would yet hope better things. As respects prices, there has been very little change, but on the whole there has been a gain of fully 1s. per qr. It is remarkable that, though the averages for the last two months were 6s. below last year, there has been a reported increase in the deliveries for the same time on the deficient crop to the amount of over 68,000 qrs.; we therefore infer that the produce of last season must be much reduced; and when we find that London has had no portion of this increase, but has been very freely delivering from granary stores, and that prices since the opening of the Baltic have been rising there with a similar state of things in France, it would seem to indicate that we have about touched our lowest, a feeling that seems spreading in the country as well as in the metropolis. Indeed, it is a long lane that has no turning, and though foreign stores abroad, more especially in Southern Russia and America, are known to be heavy, better accounts of prices in England, and worse prospects, will very probably influence the rates there, as both countries complain of the late depression in the grain trade, and with a chance of doing better by waiting they may restrain their shipments; and should a drought set in the rise in spring corn must occasion a more liberal use of wheat for cattle food as proportionately cheaper. We have now come to the period of weather markets, and with prices so low there seems a much greater chance of amendment than otherwise. The following rates were recently quoted at the several places named: white wheat at Paris to 51s., red 47s., white at Bordeaux 47s. In Belgium the range for wheat was from 45s. to 47s.

Rotterdam quoted 44s.; for white Zealand, Polish, at Amsterdam, 51s. Holstein wheat at Hambro 40s. Rostock 44s., white, 48s. At Stettin quotations ruled from 36s. to 42s. Fine wheat at Danzig had become so scarce that there were no offers on the London market, and fine new was worth 51s., cost, freight, and insurance included. At Cologne, good quality red was worth 42s. At Peath, in Hungary, heavy Banat or Theiss was quoted at 38s., inferior sorts 34s.; red at Vienna 42s., fine at Venice 47s., Berdianaki at Genoa 40s., the best at Porrentruy, Switzerland, 48s., at Romanahorn 50s. No. 1 red spring wheat, at New York, 38s. per 480 lbs.; No 2 36s., winter 38s. 6d.

The first Monday in Mark Lane commenced on a moderate supply of English wheat, and only one cargo of foreign. The show of fresh samples from Essex and Kent was scanty, and fine qualities fully maintained their previous value, but did not go off very freely, the remainder being difficult to quit. A rather better inquiry was experienced for foreign, but holders were not able to establish any advance, buyers operating with great caution. But few floating cargoes remaining for sale, prices were unaltered. Though the weather, which commenced very cold, became more general as the week advanced, there was generally very little change. The earlier markets mostly were unaltered, but those held later in several instances were 1s. down. Among those were Birmingham, Newcastle, Sheffield, and St. Ives, and several others on Saturday. Liverpool was down 2d. to 4d. for the week. Scotland had quiet markets. The tendency at Glasgow was rather in favour of buyers. The show of Irish wheat at Dublin being very limited, prices were up 6d. per barrel; but there was no improvement in foreign qualities.

On the second Monday the arrivals, both English and foreign, were moderate. The show of samples from the near counties was limited, and with the weather more general, accompanied with showers, more difficulty was found in placing English samples. Kentish factors, who generally are most desirous of selling, in some instances accepted a reduction of 1s. per qr. on former rates; but those of Essex would not submit, so but little was done. The foreign trade was also dull, and to sell low descriptions, such as Russian and inferior spring American, some holders were content to take 1s. per qr. less, but the higher Baltic qualities were steady as to value. Though the arrivals of floating cargoes were small, prices tended downwards. Dull accounts from London, the commencement of the holidays, and improved weather all contributed to make markets heavy in the country. Though several places noted no change, it was chiefly from want of bu-

iness. The following markets were all 1s. per qr. cheaper, viz., Bourn, Barnley, Ipswich, Melton Mowbray, Rugby, Rotherham, Stockton, Sleaford, and Sheffield. Liverpool gave way 2d. per cental on Tuesday. Edinburgh was down 6d. per qr., and Glasgow 3d. to 6d. per boll, with a limited inquiry. No change was noted in the value of wheat at Dublin, or indeed in any of the provincial towns.

The third Monday in Mark Lane had about the usual supply of English wheat, with a moderate increase from the Continent. The show of fresh samples from Kent and Essex was very small, and it being Easter Monday the attendance was equally so, and also business transacted. With so little passing the former rates were unaltered for English qualities, and it was the same with foreign, only needy buyers making their appearance. With few cargoes afloat unsold, prices were fully supported. Though scarcely emerged from the holidays, and with an outbreak of summer weather, the country trade throughout the week was unusually firm, scarcely any markets complained of dulness; many were slightly in sellers' favour, and some were about 1s. higher—among these were Boston, Newark, Birmingham, Manchester, and most of the markets held on Saturday, Liverpool throughout the week being firm. Glasgow exhibited an upward tendency, and foreign wheat in Dublin was more in demand, at fully the previous rates.

The fourth Monday commenced with a moderate arrival of English wheat and increased supplies of foreign, half being from the Baltic and a fair quantity from New York. The show of fresh samples from Kent and Essex was scanty; and as several of the later country advices noted an improvement, 2s. per qr. advance was at first demanded, but only 1s. was eventually paid, and that reluctantly. There was a moderate inquiry for good American and Russian at a similar improvement, and Baltic sorts were held for more money.

The imports into London for four weeks were 20,273 qrs. English and 42,829 qrs. foreign, against 19,966 qrs. English, 70,725 qrs. foreign for the same period in 1869: exports 4,555 qrs. The imports into the United Kingdom for four weeks, ending 16th April, were 1,905,633 cwt. wheat, 456,655 cwt. flour, against 1,621,404 cwt. wheat, 303,009 cwt. flour in 1869. The general averages commenced at 42s. 5d., and closed at 42s. 10d.: those of London began at 45s. 4d., and ended with 44s. 2d. per qr.

The flour trade has been quiet throughout the month. Country sorts improved 1s. per sack on the fourth Monday, and American barrels, notwithstanding a fair supply, realized rather more money; the former closed at 30s. per sack, the latter at 23s., with something beyond for any extra fine qualities, such being scarce. Town flour has kept to the former price of 40s. for the best make. The imports into London for four weeks were 78,091 sacks English, 4,372 sacks 80,804 barrels foreign, against 85,338 sacks English, 11,006 sacks 7,506 barrels in 1869.

Maize, which was unduly depressed in January, has been steadily rising ever since, so that, from the lowest point, 5s. per qr. has been gained, 2s. of which were made in the last four weeks. But the final market, though not oppressed with arrivals, exhibited symptoms of dulness or possible reaction; but as the best white is only worth 31s. to 32s., and yellow 30s. to 31s., there is little probability of its declining much more, which increases the value of Springcorn. The supplies for the month were 26,101 qrs. against 38,554 qrs. in 1869; and, as prices in America are much higher than here from the failure of the crop, nothing from that quarter can be expected.

The making season drawing to its close, the best qualities have been in very limited demand, at unaltered

rates, and indeed prices have become nominal; but the increased supplies of grinding foreign have not prevented a rise of about 6d. to 1s. per qr.; good qualities can still be had at 22s. 6d. to 24s. The imports into London for four weeks have been 6,178 qrs. British, of which very little was from Scotland, and 44,227 qrs. foreign; against 6,328 qrs. British and 24,580 qrs. foreign in 1869.

Of oats we have this month, as well as the last, been without a single shipment from Scotland or Ireland, and a mere bagatelle of home growth has come to hand; but the foreign supplies since the opening of the Baltic have trebled the previous quantities. On the first market the increase, when no fear of drought was entertained, reduced values 6d. per qr.; but they have since recovered fully 1s. 6d. per qr., leaving the gain quite 1s. per qr., though the last market, showing the heaviest arrivals, was comparatively dull, from the fact that dealers were fairly in stock. 58lb. Swedes were then worth 20s., and 40lb. per bushel 21s. The imports for four weeks were 1,757 qrs. English, 153,977 qrs. foreign, against 1,743 qrs. English, 114 qrs. Scotch, 3,480 qrs. Irish, 100,617 qrs. foreign, for the same period in 1869. Future rates must be governed by the weather. Should plentiful rains come down, and further heavy arrivals appear simultaneously, we may see a decline of 1s.; but there seems more room for an advance than otherwise.

Beans have been rather hardening in value, farmers' stocks being pretty well exhausted, and foreign arrivals not free; so prices have risen for the month about 1s. per qr., Egyptian being worth 36s., and good French 38s. If maize should further advance, the value of this pulse would also be enhanced, though the demand naturally falls off in warm weather. The arrivals into London for four weeks were 2,491 qrs. English, 5,356 qrs. foreign, against 1,636 qrs. English, 2,097 qrs. foreign, for the same period in 1869.

Peas, though not much inquired for, have fully maintained their previous value, from the falling-off in the supplies, good white being worth 35s. to 36s., and grey 32s. to 33s.

The supply of linseed has been very short, and values have improved about 1s. But very little is now expected from Russia, the growth having been short, and crops inferior; so there is no chance at present of its returning to the easy rates which ruled many years ago.

The value of linseed cake has also been increased about 5s. per ton, the want of herbage for the lambs and cattle greatly increasing its use.

The cloverseed trade this season has been disappointingly small; but values have been well maintained, from the deficiency of our own crop and light foreign supplies. The late very rough and cold weather materially delayed the commencement of sowing; and, now much has been sown, farmers are waiting for showers, when doubtless a fresh demand would spring up both for this seed and tares, the latter being only partially planted.

Rapeseed, from reported failures abroad, has been almost daily rising in value.

COMPARATIVE AVERAGES.

Years.	WHEAT.			BARLEY.			OATS.		
	Qrs.	s.	d.	Qrs.	s.	d.	Qrs.	s.	d.
1866...	72,215	...	4 9	14,817	...	37 2	3,453	...	24 8
1867...	54,041	...	61 4	11,606	...	39 8	4,318	...	25 5
1868...	38,953	...	73 8	5,780	...	43 10	3,683	...	29 0
1869...	55,902	...	46 8	12,083	...	44 6	3,062	...	27 7
1870...	62,045	...	42 10	14,615	...	35 2	3,566	...	21 5

FLUCTUATIONS in the AVERAGE PRICE of WHEAT.

Prices.	Mar. 12.	Mar. 19.	Mar. 26.	April 2.	April 9.	April 16.
42s. 10d.
42s. 8d.
42s. 5d.
41s. 9d.
40s. 9d.

BOROUGH AND SPITALFIELDS.

English Shaws	110s. to 120s. per ton.
" Regents	120s. to 140s. "
Scotch Regents	100s. to 140s. "
" Rocks	90s. to 110s. "

BUTTER, per cwt.: s.	s.	CHEESE, per cwt.: s.	s.
Dorset.....	186 to 189	Cheshire.....	70 to 80
Friesland.....	116 140	Dbles. Gloucester.....	64 78
Jersey.....	104 122	Cheddar.....	60 94
Fauxz, per dow. ...	14 16	American.....	64 76
BACON, per cwt:		HAMS: York, old.....	90 112
Wiltshire, green.....	72 76	Cumberland.....	90 112
Irish f.o.b.....	71 75	Irish new.....	88 112

POULTRY, &c., MARKETS.—Goats, 6s. to 8s.; Ducks, 3s. 6d. to 5s. 6d.; Saddle Fowls, 3s. to 6s.; Sussex ditto, 3s. to 4s.; Boston and Essex, 2s. 6d. to 4s.; Irish, 1s. 6d. to 2s.; Rabbits, tame 1s. to 2s., ditto wild 6d. to 1s.; Pigeons, 1s. to 1s.; Guinea Fowls, 3s. to 4s.; Leverets, 1s. to 2s.; Hares, 8s. seconds 6s. per 120; Plover Eggs, 2s. 6d. per dozen.

CORK BUTTER MARKET. (Friday last)—Ordinary, first quality, export 135s., country 132s.; second, export 130s., country 127s.; third, export 98s., country 96s.; fourth, export 80s., country 77s.; fifth, export 60s., country 67s. Mild-cured: first quality, export 126s., country 123s.; second quality 125s., country, 133s.; third, export 101s., country 98s. Currency: Ordinary Butter 10s. per cwt. less; mild cured 9s. ditto; sponged, 2s. ditto; thirds, fourths, fifths, and sixths of kegs, 4s. less.

ENGLISH WOOL MARKET.

CURRENT PRICES OF ENGLISH WOOL.		s.	d.	s.	d.
FLENCES—Southdown hogs	..... per lb.	10	0	10	10
Half-bred ditto	.....	1	3	1	4
Kent fleeces	.....	1	3	1	3
Southdown ewes and wethers	...	1	0	1	10
Leicester ditto	.....	1	2	1	10
Sorts—Clothing, picklock	.....	1	4	1	4
Prime	.....	1	2	1	3
Choice	.....	1	1	1	3
Super	.....	1	0	1	0
Combing, wether mat.	.....	1	3	1	3
Picklock	.....	1	1	1	1
Common	.....	0	11	1	0
Hog matching	.....	1	4	1	4
Picklock matching	.....	1	1	1	1
Super ditto	.....	0	11	1	0

LEEDS (ENGLISH AND FOREIGN) WOOL MARKET. (Friday last).—The demand for English wool runs parallel with the actual requirements of the manufacturers, and, in the face of an early clip, should the weather be favourable, no one is disposed to buy old wool on speculation. Prices for most qualities are maintained with difficulty. The demand for colonial wool is expending itself mainly at the public sales in London. Prices are quite up to last sales, but the strength and soundness of wool from Victoria is defective. For worsted purposes this is a serious matter, and also for some kinds of clothing.

PRICE CURRENT OF GUANO, &c.

Peruvian Guano direct from the importers' stores, £13 10s. to £13 18s. per ton.

Bones, 27 vs. to 27 15s. per ton.
 Animal Charcoal (70 per cent. Phosphate) 25 per ton.
 Coprolite, Cambridge, whole 25, ground 25 10s. per ton.
 Sulph. 10s. per ton.
 Gypsum, 21 10s. whole 23 10s., ground 23 10s.
 Sulph. 10s. per ton.
 Sulphuric Acid, concentrated 1 94s 10d. per lb. brown 1 71s 0d.
 Sulphate of Ammonia 18s. 10d. to 19s. 10d. Salt (in London) 24s. per ton.
 Flup. Muriate 25s. to 27 10s. Disinfect. Soda 27s. 6d. per ton.

**E. PURSER, London Manure Company,
116, Fenchurch Street, E.C.**

Quano, Peruvian #13	7 6 to 20	0 0	Coted. Oaks, decor.	25 50 to 27 00	2 10
Bone Ash.....	5 10 0	0 0	Clawed, N.A.M.		0 10
Phosphate of Lime 0 1 1/2	0 1 0	0 1 0	red, new per cwt	3 50	2 10
Linseed Oak, per ton—			Niger.	2 70	0 10
Amar., thin, bgs.	9 10 0	9 15 0	Nitr. of Soda, p. ct.	0 16 0	0 10
Lined. Bomby. p.q.r.	3 0 6	3 1 0	Brimstone, 22 1/2 gr.	0 0 0	7 10 0
Rapeseed, Guzerat 3 4 0	3 5 0	3 5 0	Tallow, 1st P.Y.G.	2 60	0 0 0

SAMUEL DOWNES AND CO., General Brokers,
No. 7, The Albany, Liverpool.

Agricultural Chemical Works, Stowmarket, Suffolk.	
Prentice's Cereal Manure for Corn Crops	per ton £8 0
Mangold Manure	8 0
Prentice's Turnip Manure	6 10
Prentice's Superphosphate of Lime	8 0

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